

1818 HOPE'S 1926
WINDOWS

Sole Agents for New South Wales :

NOYES BROS. (SYDNEY) LTD.

115 CLARENCE ST. SYDNEY. 11 WATT ST. NEWCASTLE.

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HOPE'S

*Metal Windows
and Casements*



HENRY HOPE & SONS LTD

HEAD OFFICE & WORKS

SMETHWICK · BIRMINGHAM

Telegrams: "Conservatory, Birmingham" Telephone: Smethwick 320 (5 lines)

HOPE'S METAL WINDOWS

Our Sections. Our Sections 21, 22 and 23 are fully illustrated on pages 8 to 13. They differ only in weight and strength, and are all of universal application, i.e., to open outwards, inwards or on pivots, and can be made to glaze either from outside or inside. We developed these sections after prolonged trial more than ten years ago, when we combined the principle of two good points of contact with a large air cavity, the frame and casement being each a solid welded unit without any loose pieces. Except for a few minor improvements these sections stand to-day as we originally designed them, our experience with their use in important buildings all over the world having been entirely satisfactory.

Quality: We supply three qualities. Quality 1 and 2 are both fitted and finished in the same manner with two coats of anti-corrosive paint after thorough cleaning; but Quality 1 is fitted with bronze fittings and Quality 2 with rust-proofed iron fittings. Quality 1a is finished with a coat of baked enamel, the fittings being the same as for Quality 1, with the exception that the bracket and moving bar of our non-projecting stay No. 223 are made of solid bronze.

Solid Bronze Casements. For the best work we recommend the use of solid extruded bronze; it is everlasting, has a beautiful surface and improves in colour with age. We supply all types of our casements in this metal.

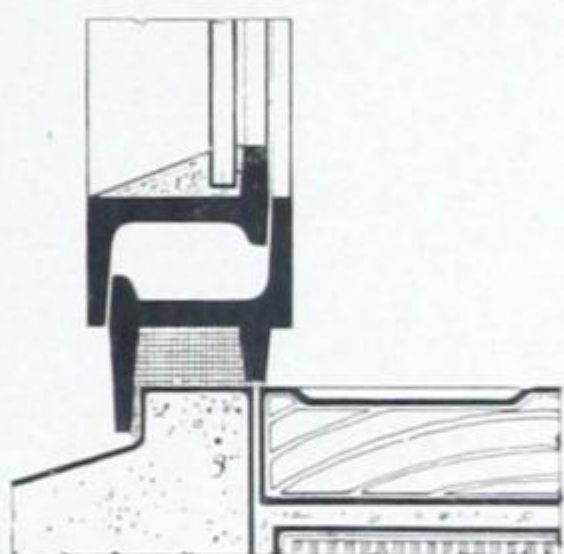
Which Section to Use. We have stated under each full sized detail (pages 9, 11 and 13) the maximum heights and widths to which each section and type of casement should be restricted. These sizes have been determined after many years' experience, and we strongly advise they should not be exceeded.

Setting & Glazing. It is important that our windows should be set and glazed by our own workmen. This is for the advantage of the building owner, as we cannot otherwise be held responsible for windows being satisfactory on completion. We keep a specially trained staff for this work and undertake the supply of all labour or the superintendence of contracts in any part of the world.

Large Windows. We have a wide experience of the design and construction of all classes of windows of architectural importance for public buildings, banks, insurance offices, etc., in steel, cast-iron and bronze. We are always pleased to advise architects, and to supply detailed drawings and estimates free of charge and without any obligation, implied or otherwise, to place an order.

Glazing. All casements, composite windows or doors of our Sections 21, 22 and 23 may be glazed either from outside or inside. Appearance usually governs the choice, and it should be observed that where single sheets of glass are used the difference is negligible. Where windows are divided into panes with \perp astragal bars, glazing from inside adds materially to the sturdy appearance of the bars viewed from the outside. Apart from these considerations, we advise outside glazing as a general rule. Instructions for glazing are given on page 59.

Condensation Gutters. Condensation is not usually excessive except during the first winter of a new building, when it arises from moisture in the walls which has not evaporated. During this time the condensation gutters or lips, which are still a feature of some casements, are useless because their capacity is too small, while the so-called outlet holes, which are provided, only serve as inlets for rain and wind. Condensation disappears in an occupied building which is properly ventilated, and even if these lips and gutters were effective they would only serve a temporary purpose. We have studied this question closely, and have examined a number of casements which we have supplied in exposed places some years ago, and while there is little evidence of trouble from condensation, complaints of draught and leakage through weep holes are not at all uncommon. We first introduced condensation gutters in 1894, and these devices have been so much copied as to form a common feature in metal casement construction to-day. Having proved, however, that they are not only futile, but a source of leakage, we have abandoned them. In cold climates, and particularly where large sheets of glass are employed, we recommend that a channel should be formed in the cill, as sketch. Condensation will evaporate from such a channel, or when excessive can be readily mopped up.



Office Building Windows. The London County Hall and Bush House are excellent examples of the successful use of our composite steel windows in modern buildings of the highest class. They afford a wide range of ventilation and ease of control, in striking contrast with the inconveniences of the double hung sliding sash. They are fully illustrated on pages 22 to 27.

The Hope Austral Window. This is a solid steel window, which is peculiarly suitable for schools, hospitals, military barracks, large counting houses, etc. It affords a unique control of ventilation and light, and its proportions are admirably adapted for buildings in the Georgian style of architecture.

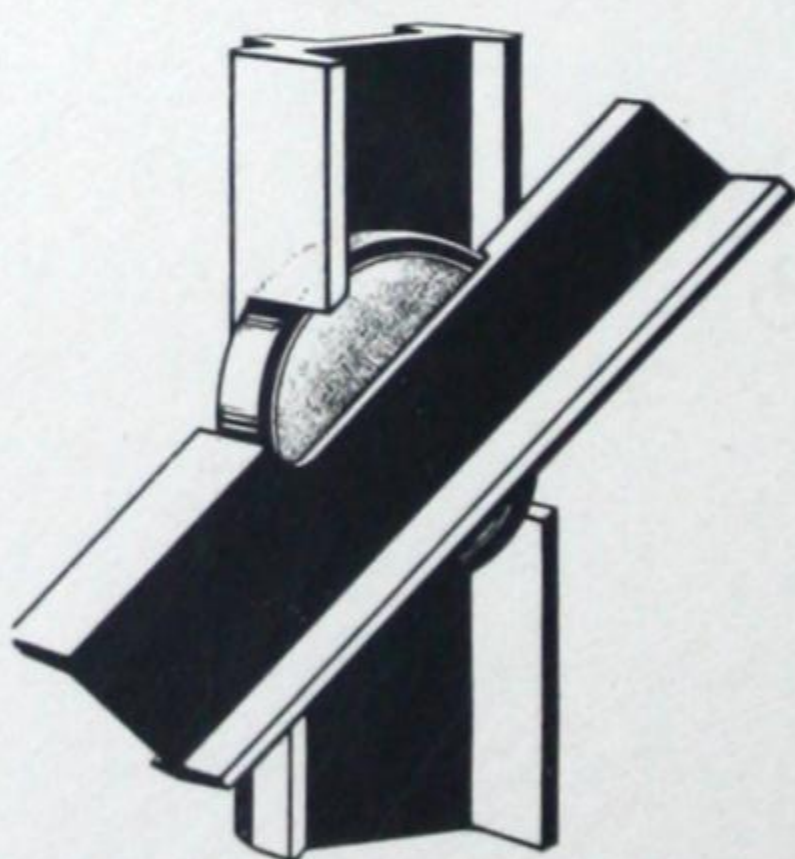
Standard Windows. We publish a separate catalogue of stock sizes suitable for small dwelling houses and similar buildings. These have proved an immense success since we introduced them in 1918, and we strongly recommend them for any building where economy is of the first importance.

“Weatherproof.” Our Sections 21, 22, 23, opening *outwards*, are weatherproof in practically any situation where a building can be conveniently placed. They have been proved all over the world, in the most exposed places by the sea, and at high elevations. We must, however, warn our customers that casements opening inwards or hung on vertical pivots, cannot be relied upon in *very exposed situations*. They are weatherproof under ordinary conditions, but where exposure is severe we advise the use of outward opening casements.

Important. In cold and temperate climates, casements should open outwards. An outward opening casement is weathertight, is not in the way of furniture or curtains, and serves as a wind deflector, giving admirable control of ventilation. Blinds, curtains and fly screens are all easily applied. Inward opening casements should only be used where sun-shutters are a necessity.

Leaded Glass. The importance of leaded glass being made in the same Works and under the same supervision as the metal casements is generally recognised. We keep a stock of all kinds of glass, with a large variety of lead comes, and our work in this department will be found thoroughly satisfactory.

Hope's Standard of Quality. We have been making windows in Birmingham for over 100 years, and have built up what is now known throughout the world as “the Hope standard of quality.” This standard is without extravagance, but embodies all those features which our experience has taught us are necessary for permanent service in permanent buildings. We make windows of all kinds, and whether it is an elaborate bronze window for a monumental building, or a simple steel casement for a cottage, the same care is taken that it is of appropriate design and that it shall serve its purpose properly.



HOPE'S PATENT CUP
PIVOT

British Patent No. 117718, Dec./17
U.S.A. „ „ 1321442, Nov./19



A HOPE COMPOSITE WINDOW AT THE LONDON COUNTY HALL
Ralph Knott, Architect

HOPE'S *Specification*

Bars. Each section is of solid rolled steel, hydraulically straightened, and free from hammer marks or distortions of any kind.

Joints. The corners are all machine cut, welded and neatly cleaned off, making both casement and frame each a solid unit without the application of any loose pieces.

Plates & Brackets. The handle plates and stay brackets are of mild steel, accurately machined and electrically welded to the casements.

Hinges. Of solid extruded bronze, with machine cut and bored joints and phosphor bronze pins. *The design of our hinges allows the casement to lift clean off the frame without scraping or binding, and no essential part of either the casement or frame is cut away.*

Pivots. All pivotted casements and those hung at top or at bottom are fitted with Hope's Patent Cup Pivots, which combine complete safety and durability with the only known weathertight pivotted joint. (British Patent No. 117718, Dec./17. U.S.A. Patent No. 1321442, Nov./19).

Hardware is fully described and illustrated on pages 28 to 35.

For all side hung and vertically pivotted casements of Quality 1 any of the bronze handles illustrated on page 31 may be chosen, and Stay 223. If Quality 2, any of the iron handles on page 31 and either of the iron peg stays on page 32.

For top hung and bottom hung casements, see fittings illustrated on page 32.

For casements hinged at top, our cam opener is the best and most durable fitting.

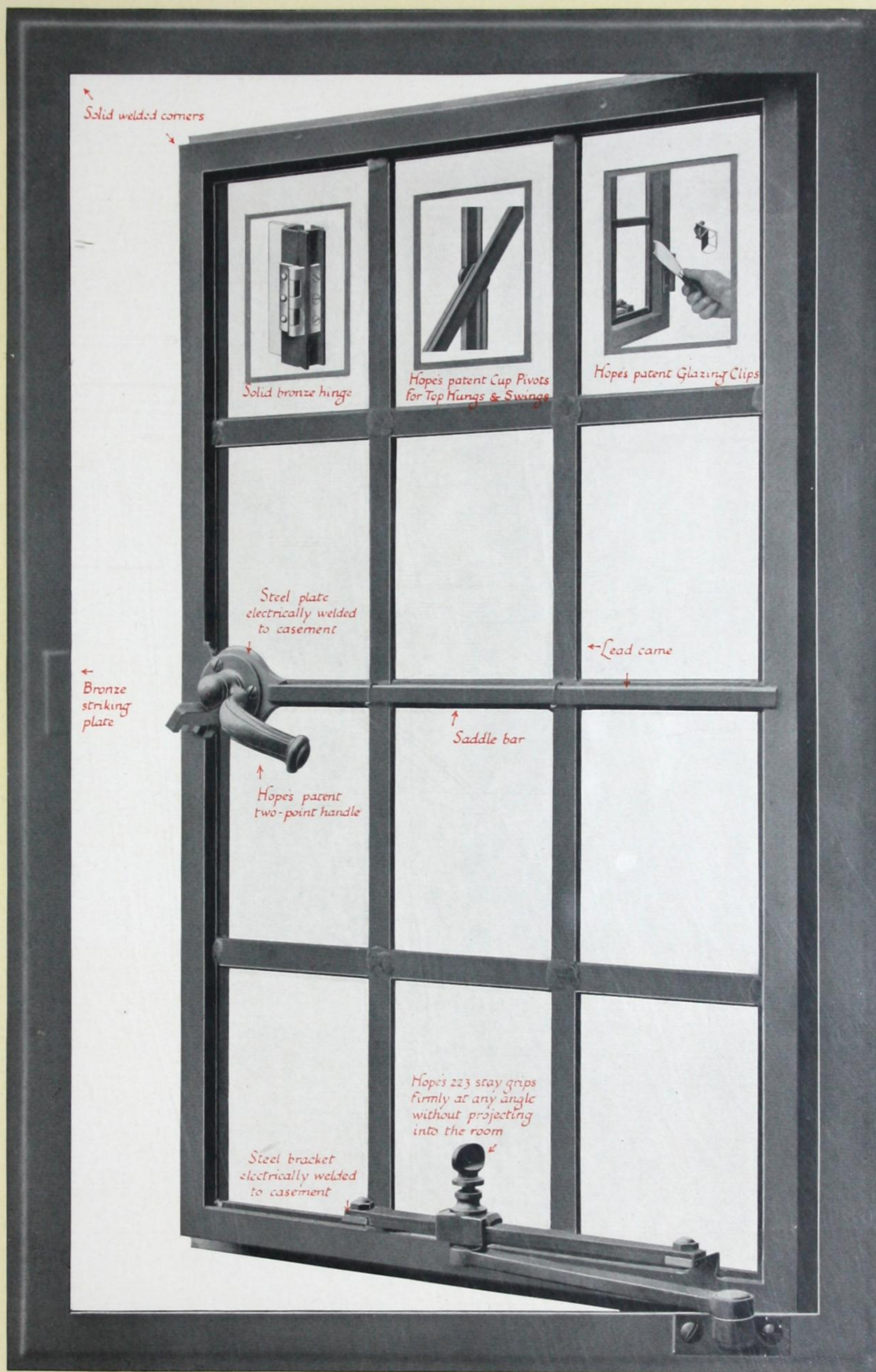
Swinging casements are fitted with gunmetal spring catch, cord-eye and pulley.

Painting. For Qualities 1 and 2: *Two* coats of anti-corrosive paint after thorough cleaning. For Quality 1A, an additional coat of enamel.

Fit & Finish. The best. Only first-class, well trained artisans are employed upon the finishing processes.

Inspection. All our casements are subjected to a rigid inspection as to size, quality and finish before despatch.

Features of Equipment

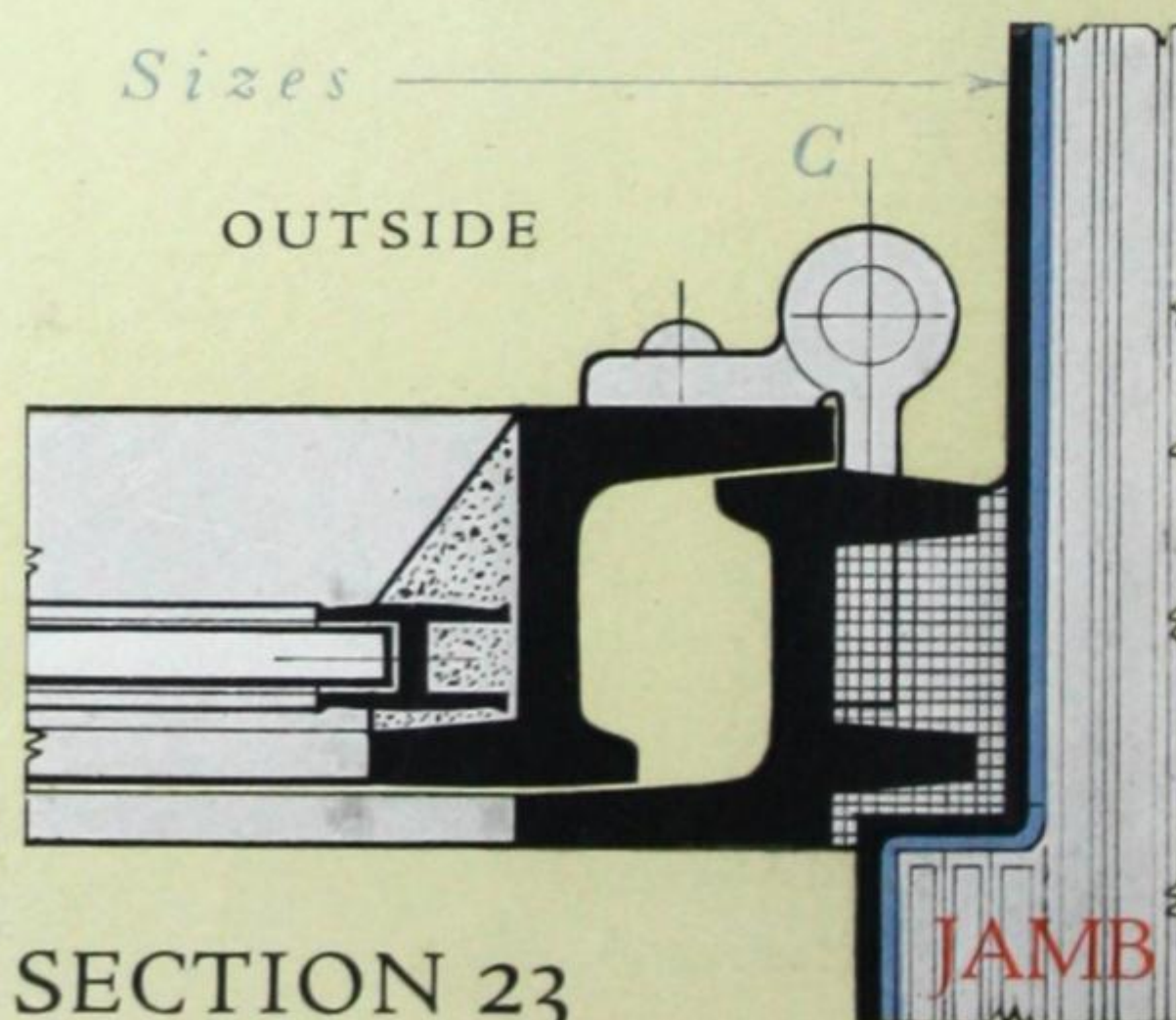
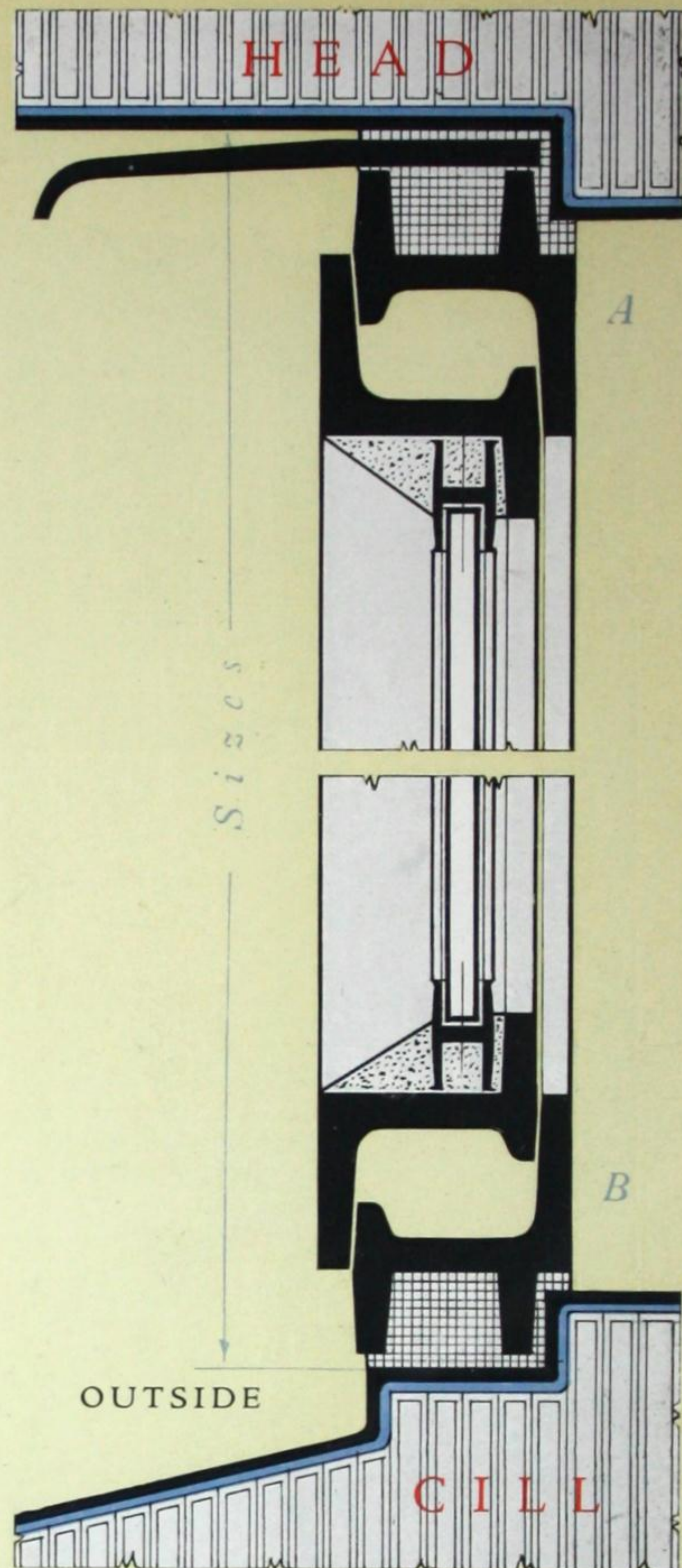


HOPE'S *Casements*



SIDE HUNG AND TOP HUNG CASEMENTS OPENING OUTWARDS, SET IN STONE, OF SECTION 23, QUALITY 1. THE LOWER CASEMENT WITH HANDLE 2393 AND SLIDING STAY 223; THE UPPER ONE HUNG ON HOPE'S PATENT BRASS CUP PIVOTS (Pat. No. 117718. Dec./17) AND FITTED WITH CAM OPENER. THE ILLUSTRATION SHEWS LEAD GLAZING, BUT CASEMENTS CAN BE SUPPLIED DIVIDED WITH \perp BARS OR PREPARED FOR SINGLE SHEETS OF GLASS. METAL OR HARDWOOD BEADS ARE RECOMMENDED, AND PARTICULARLY FOR CASEMENTS OF LARGE SIZE. FOR ALL CASEMENTS OPENING OUTWARDS REBATES TO HEADS, JAMBS AND CILLS SHOULD BE OUTSIDE AND $\frac{1}{8}$ " DEEP AS SHEWN ON THESE DETAILS. WORKING SIZES SHOULD BE GIVEN EXACTLY BETWEEN THE POINTS INDICATED BY ARROWS. FOR ORDERING INSTRUCTIONS, SEE PAGES 56 & 57.

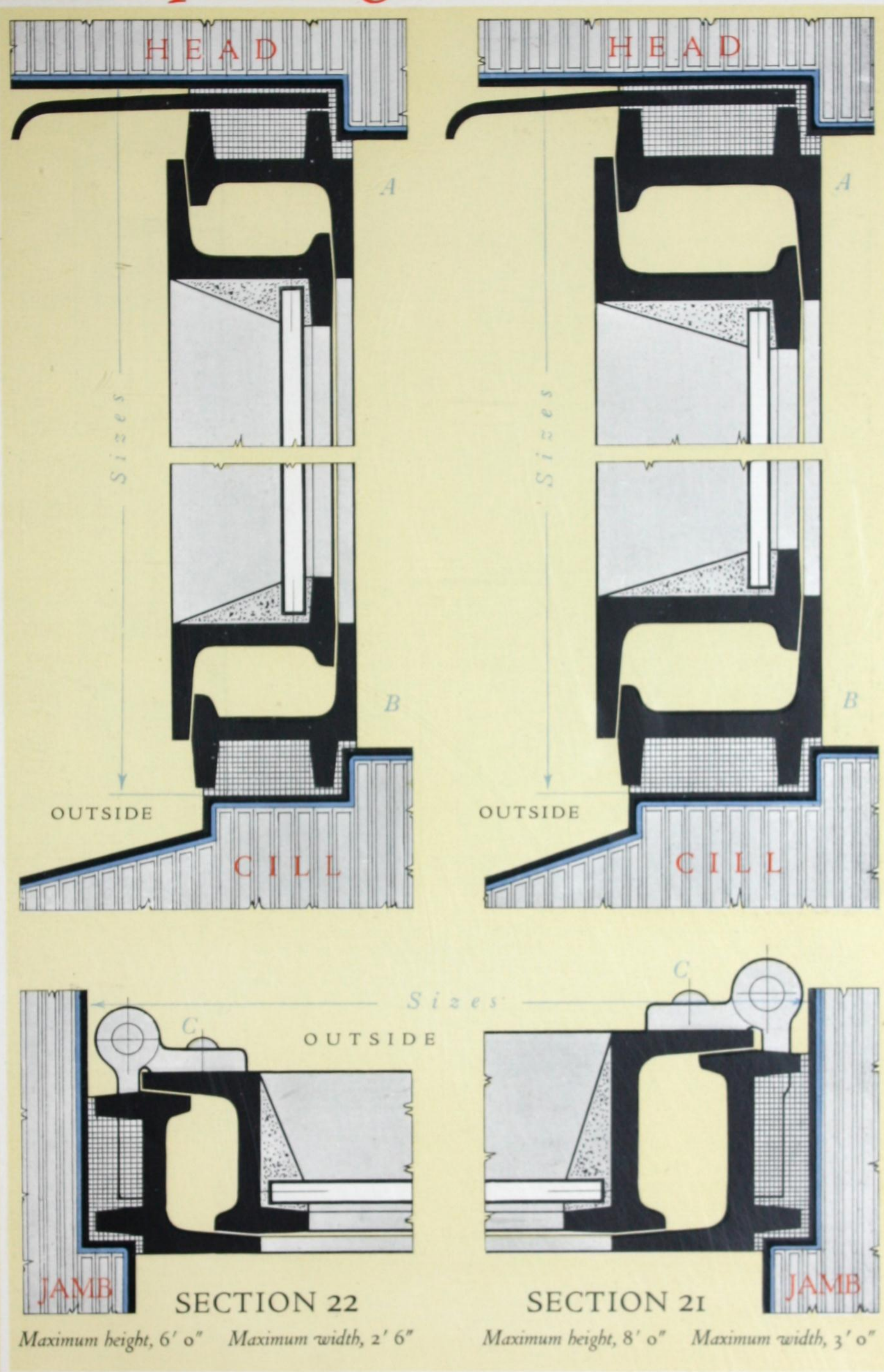
DETAILS · FULL · SIZE



SECTION 23

Maximum height, 5' 0" Maximum width, 2' 0"

Ⓜ *Opening Outwards* Ⓜ



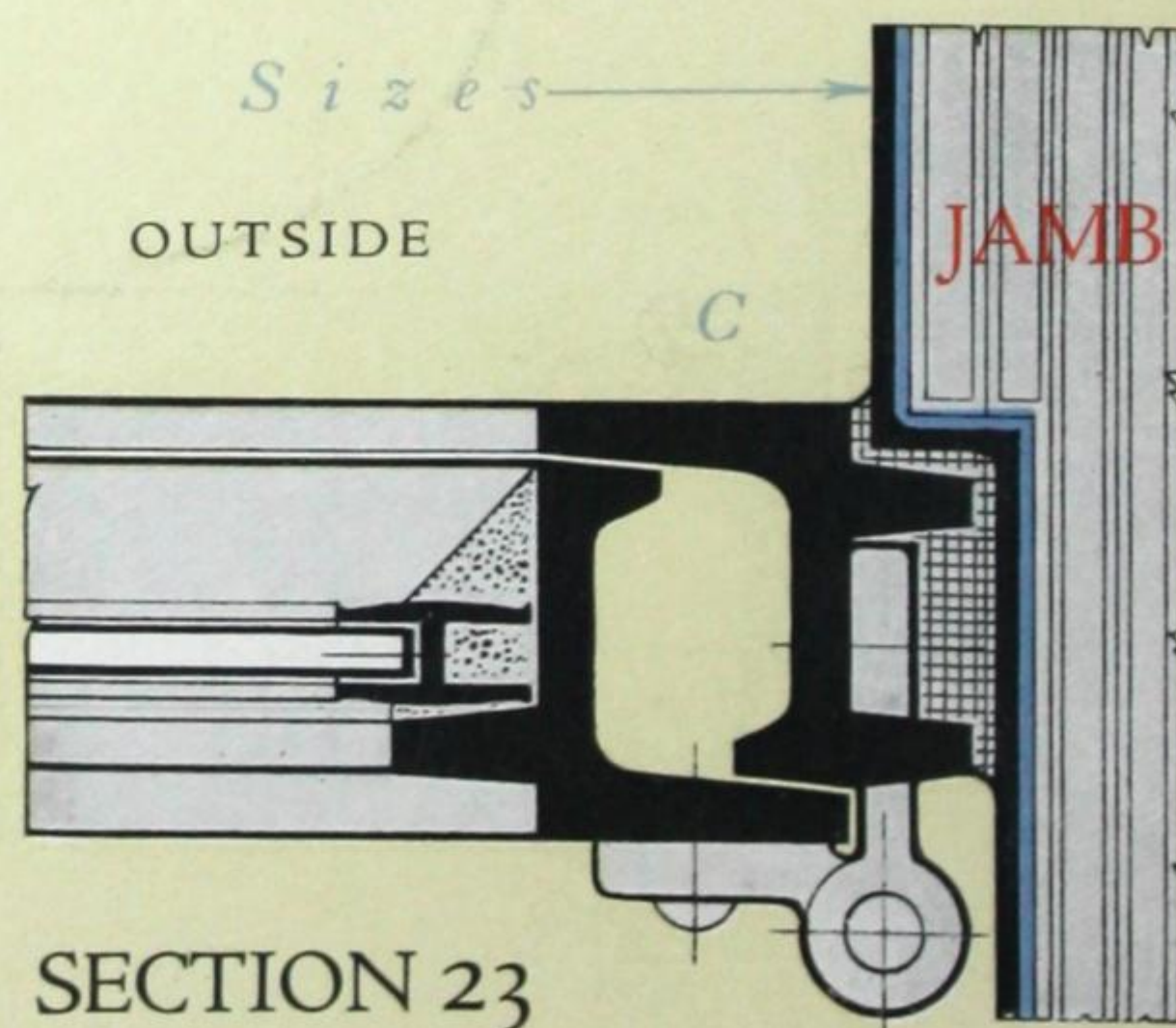
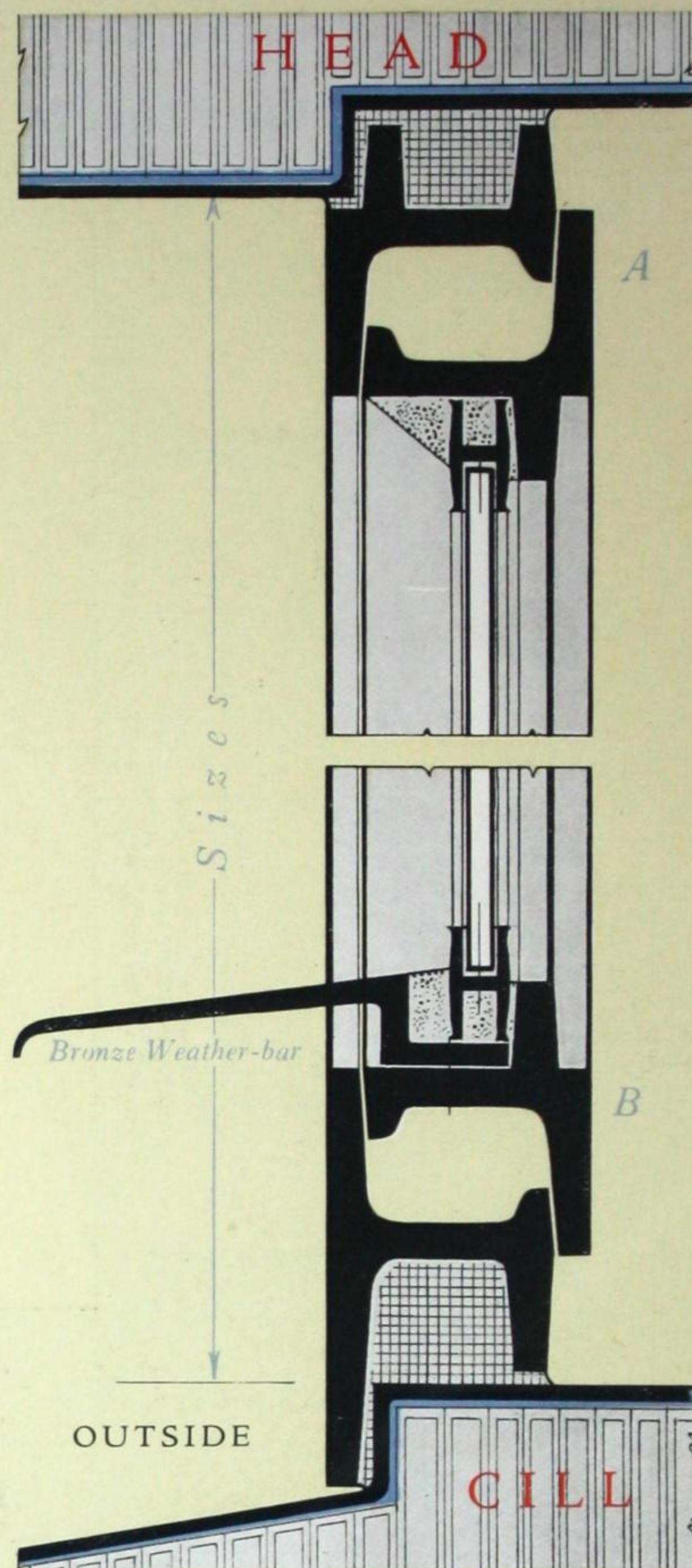
HOPE'S *Casements*



SIDE HUNG AND BOTTOM HUNG CASEMENTS OPENING INWARDS, SET IN STONE, OF SECTION 23, QUALITY 1, THE LOWER CASEMENT FITTED WITH HANDLE 1322 AND SLIDING STAY 224; THE UPPER ONE HUNG ON HOPE'S PATENT BRASS CUP PIVOTS (Pat. No. 117718., Dec./17) AND FITTED WITH SPRING CATCH AND PASSABLE SIDE ARMS. THE ILLUSTRATION SHEWS LEAD GLAZING, BUT CASEMENTS CAN BE SUPPLIED DIVIDED WITH \perp BARS OR PREPARED FOR SINGLE SHEETS OF GLASS. METAL OR HARDWOOD BEADS ARE RECOMMENDED, AND PARTICULARLY FOR CASEMENTS OF LARGE SIZE. FOR ALL CASEMENTS OPENING INWARDS REBATES TO HEAD AND JAMBS SHOULD BE INSIDE, AND TO CILL OUTSIDE, AND $\frac{3}{8}$ " DEEP AS SHEWN ON THESE DETAILS.

WORKING SIZES SHOULD BE GIVEN EXACTLY BETWEEN THE POINTS INDICATED BY ARROWS. FOR ORDERING INSTRUCTIONS, SEE PAGES 56 & 57.

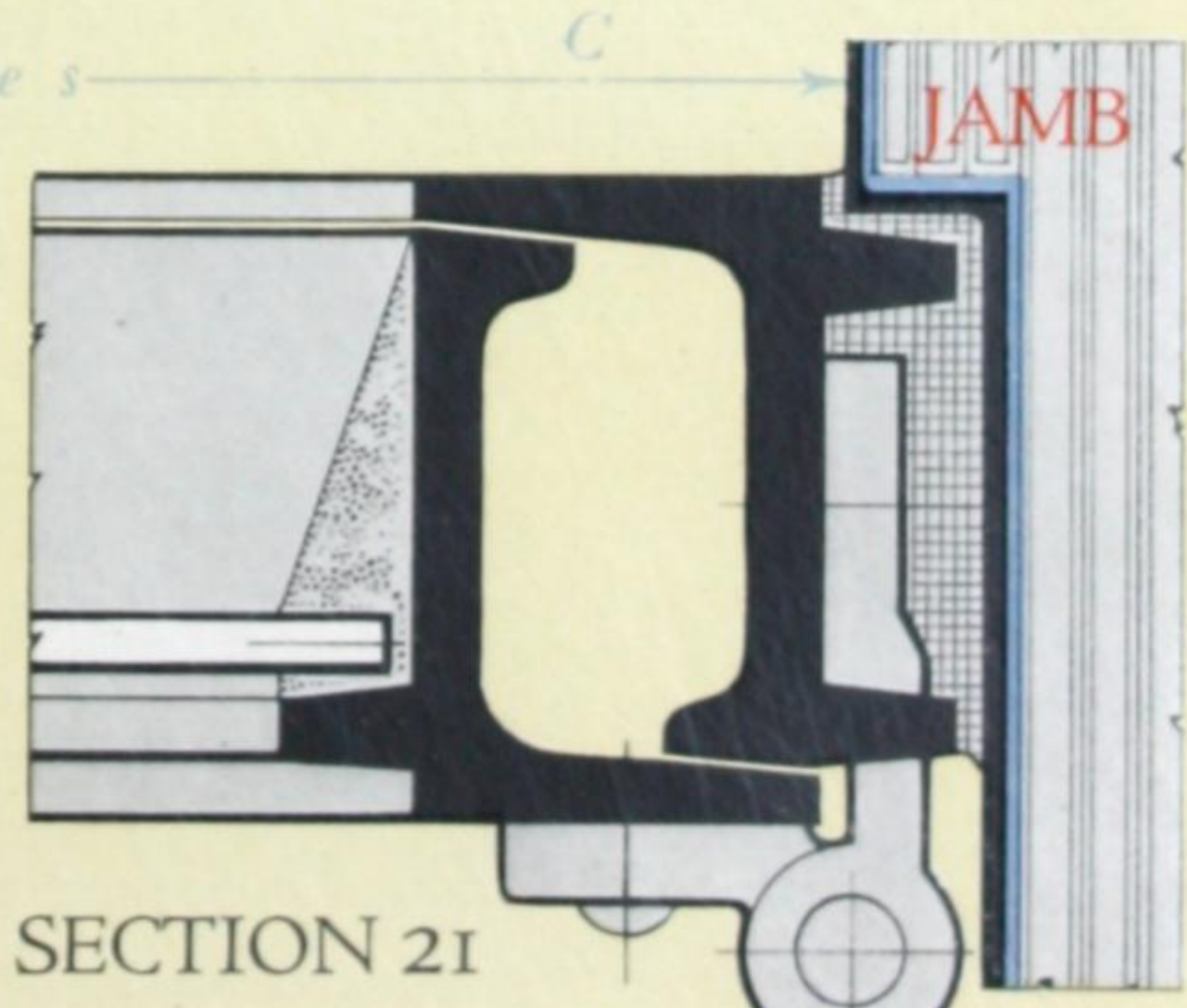
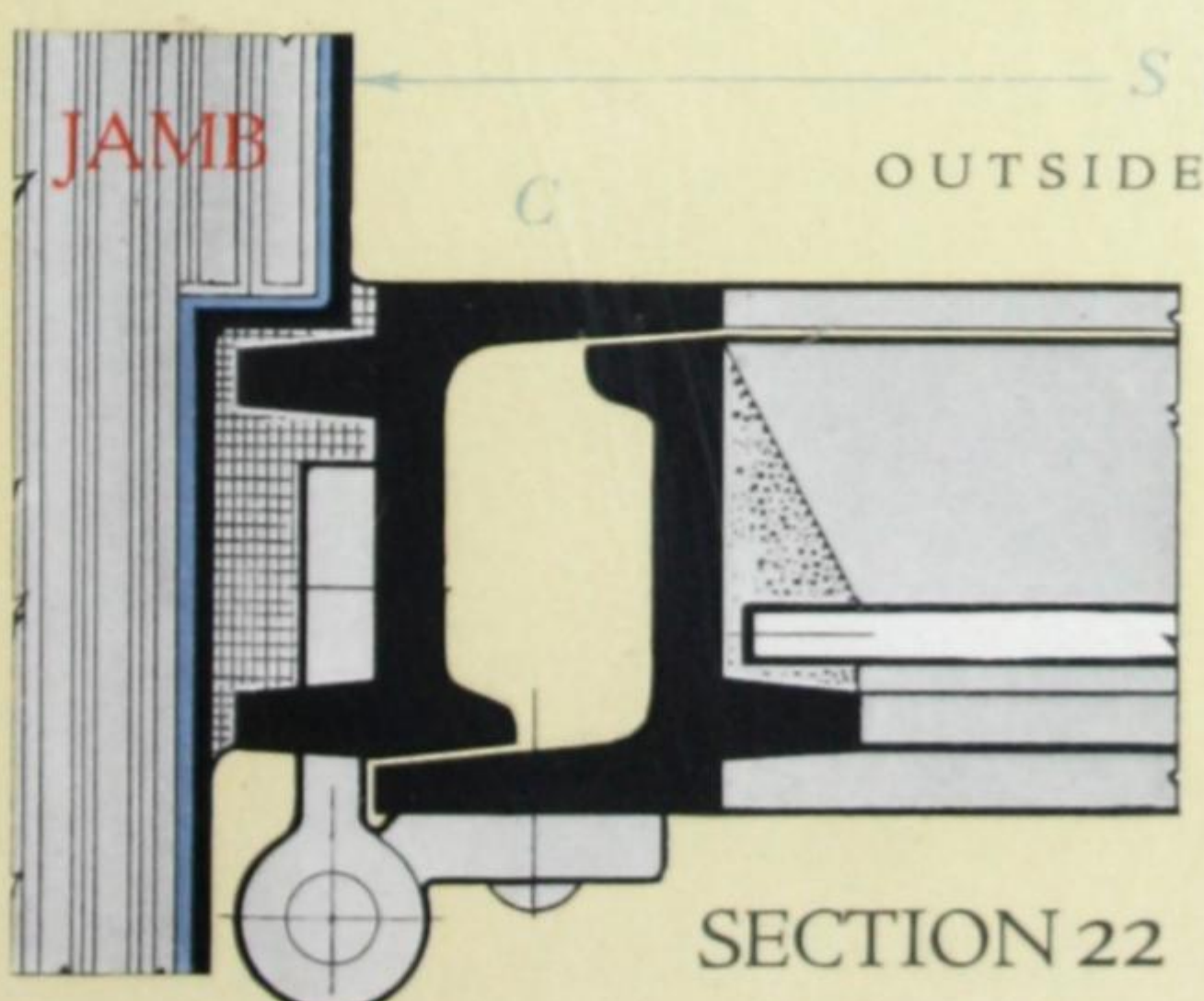
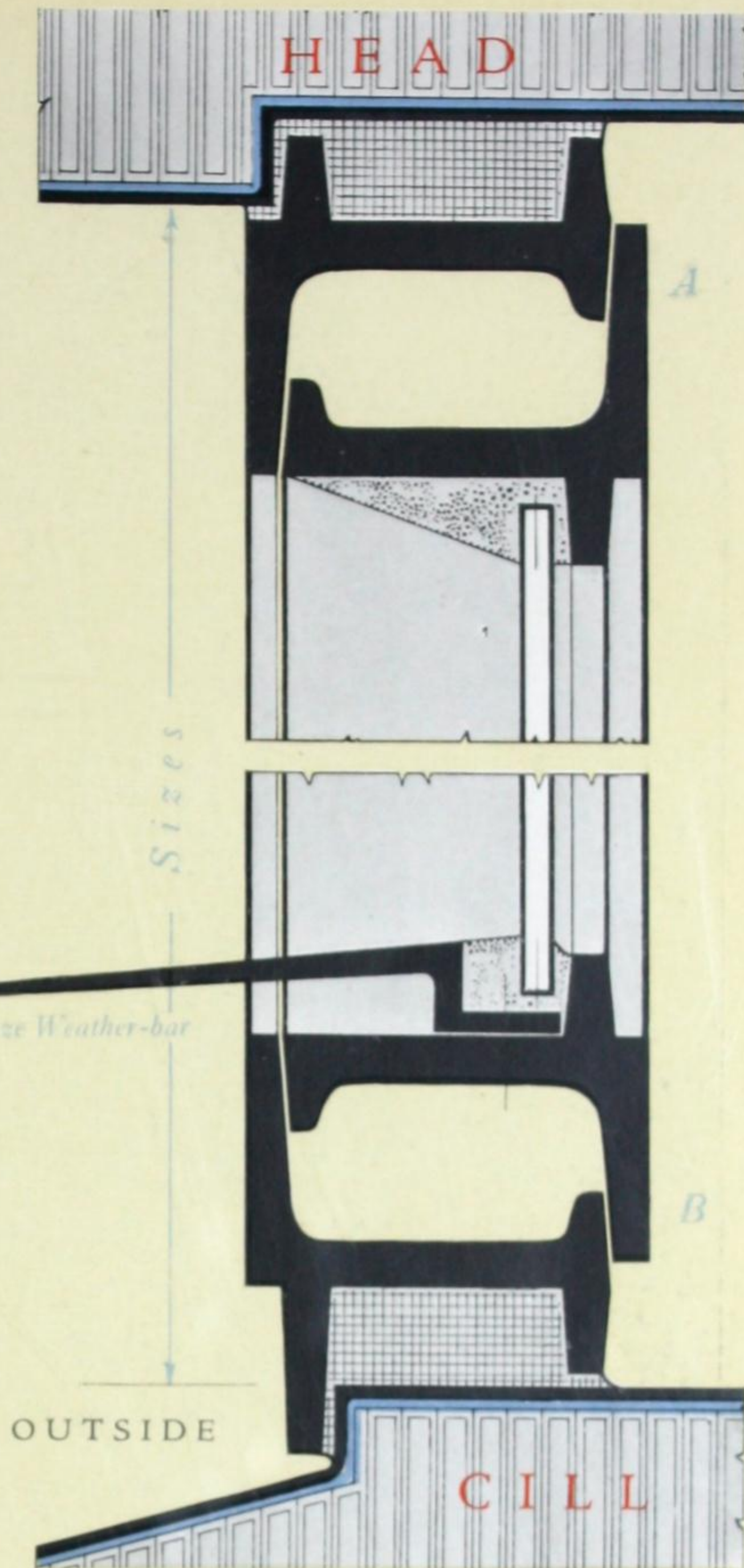
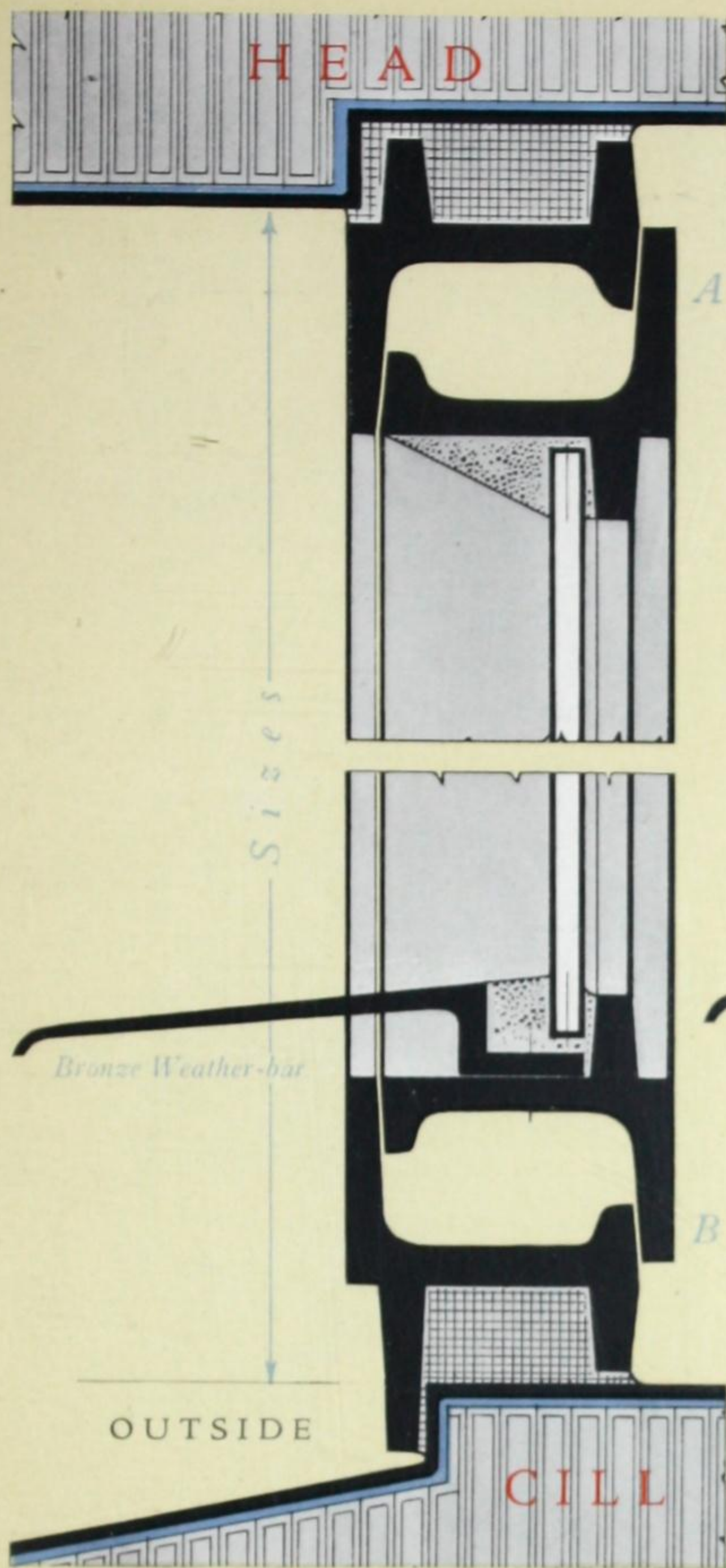
DETAILS · FULL · SIZE



SECTION 23

Maximum height, 5' 0" Maximum width, 2' 0"

Ⓜ Opening Inwards Ⓜ



Maximum height, 6' 0" Maximum width, 2' 6"

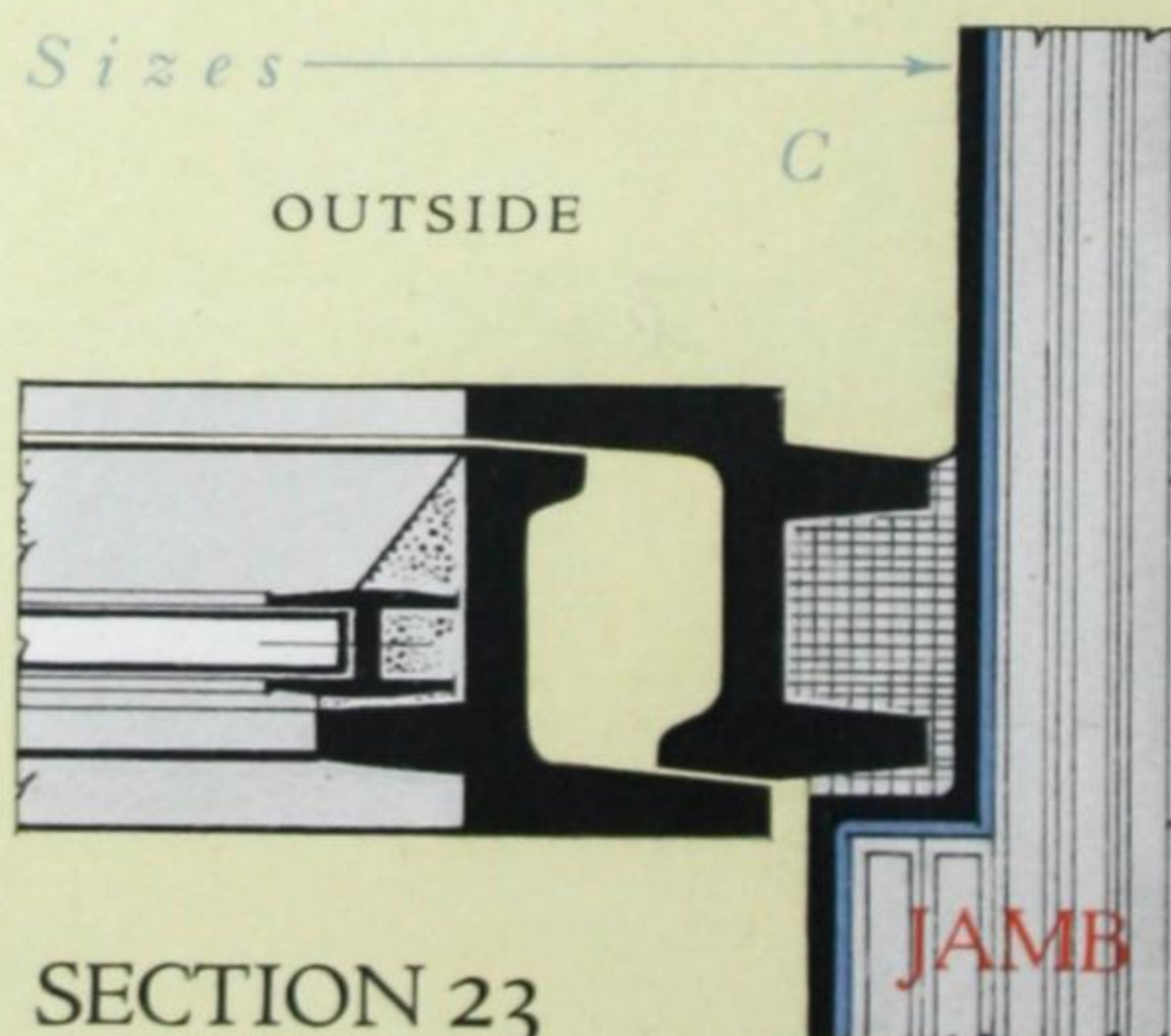
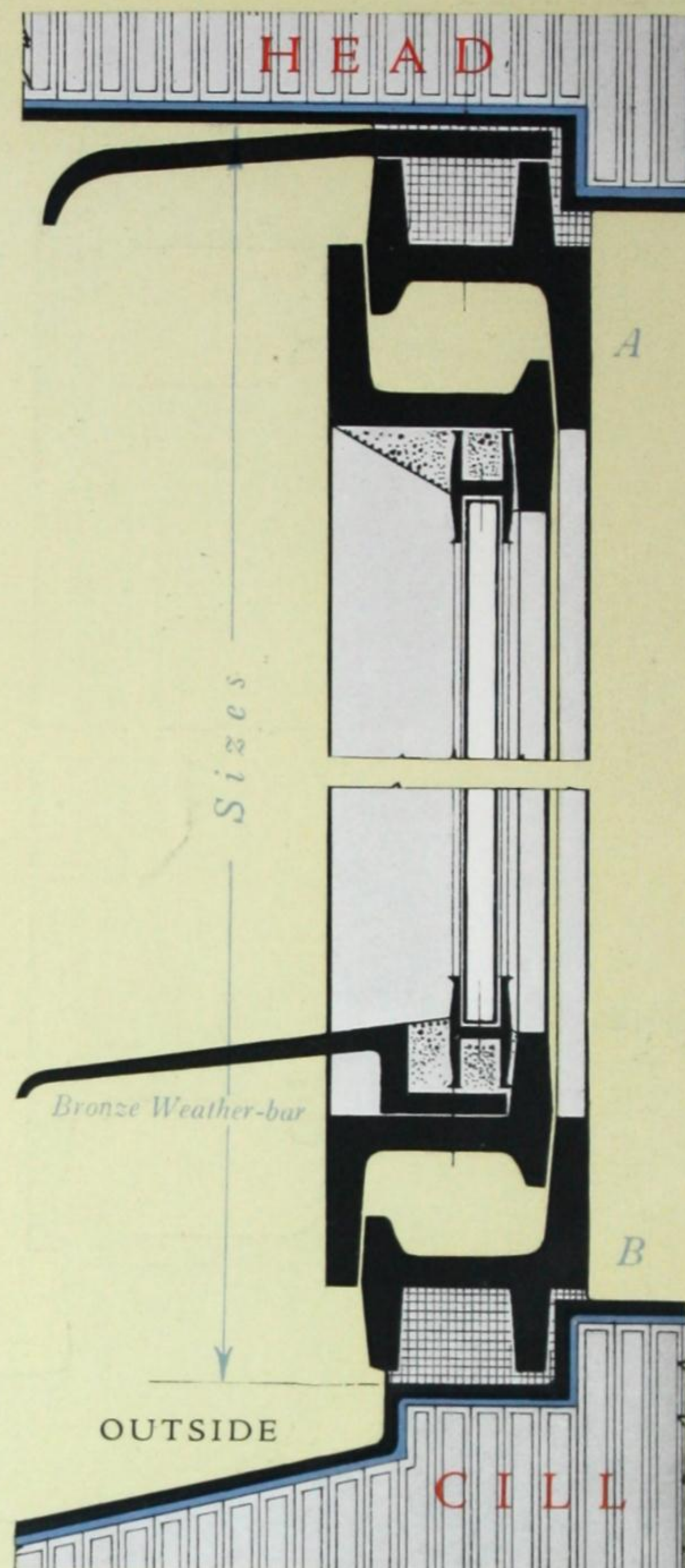
Maximum height, 8' 0" Maximum width, 3' 0"

HOPE'S *Casements*



CLEANING AND SWINGING CASEMENTS SET IN STONE, OF SECTION 23, QUALITY 1, THE LOWER CASEMENT FITTED WITH HANDLE 1323 AND SLIDING STAY 223. THE UPPER ONE WITH SPRING CATCH, CORD-EYE AND PULLEY. BOTH ARE HUNG ON HOPE'S PATENT BRASS CUP PIVOTS (Pat. No. 117718, Dec./17). . . . THE ILLUSTRATION SHEWS LEAD GLAZING, BUT CASEMENTS CAN BE SUPPLIED DIVIDED WITH \perp BARS OR PREPARED FOR SINGLE SHEETS OF GLASS. . . . METAL OR HARDWOOD BEADS ARE RECOMMENDED, AND PARTICULARLY FOR CASEMENTS OF LARGE SIZE. FOR ALL PIVOTTED CASEMENTS REBATES TO HEADS, JAMBS AND CILLS SHOULD BE OUTSIDE AND $\frac{3}{8}$ " DEEP, AS SHEWN ON THESE DETAILS. . . . WORKING SIZES SHOULD BE GIVEN EXACTLY BETWEEN THE POINTS INDICATED BY ARROWS. . . . FOR ORDERING INSTRUCTIONS, SEE PAGES 56 & 57.

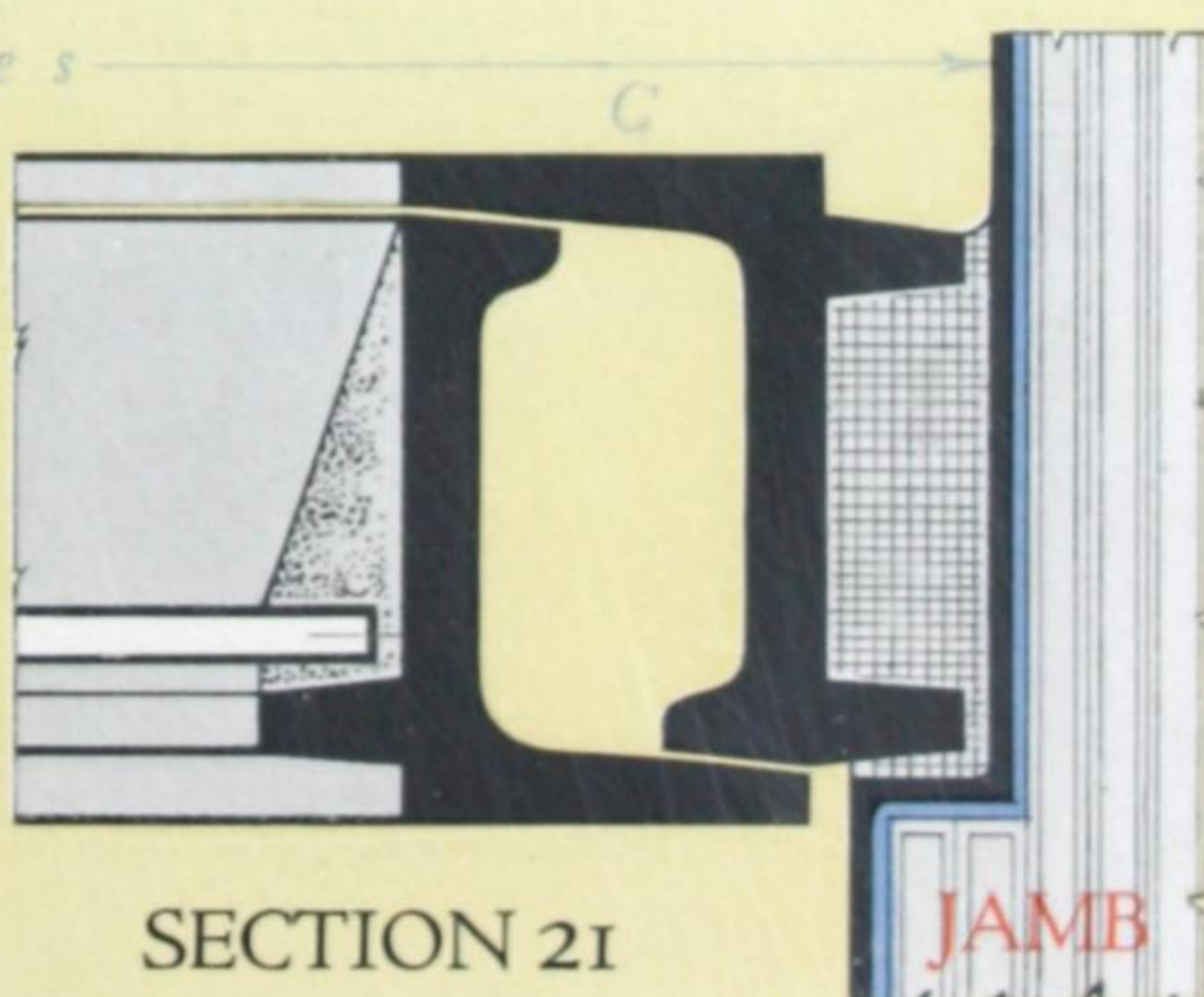
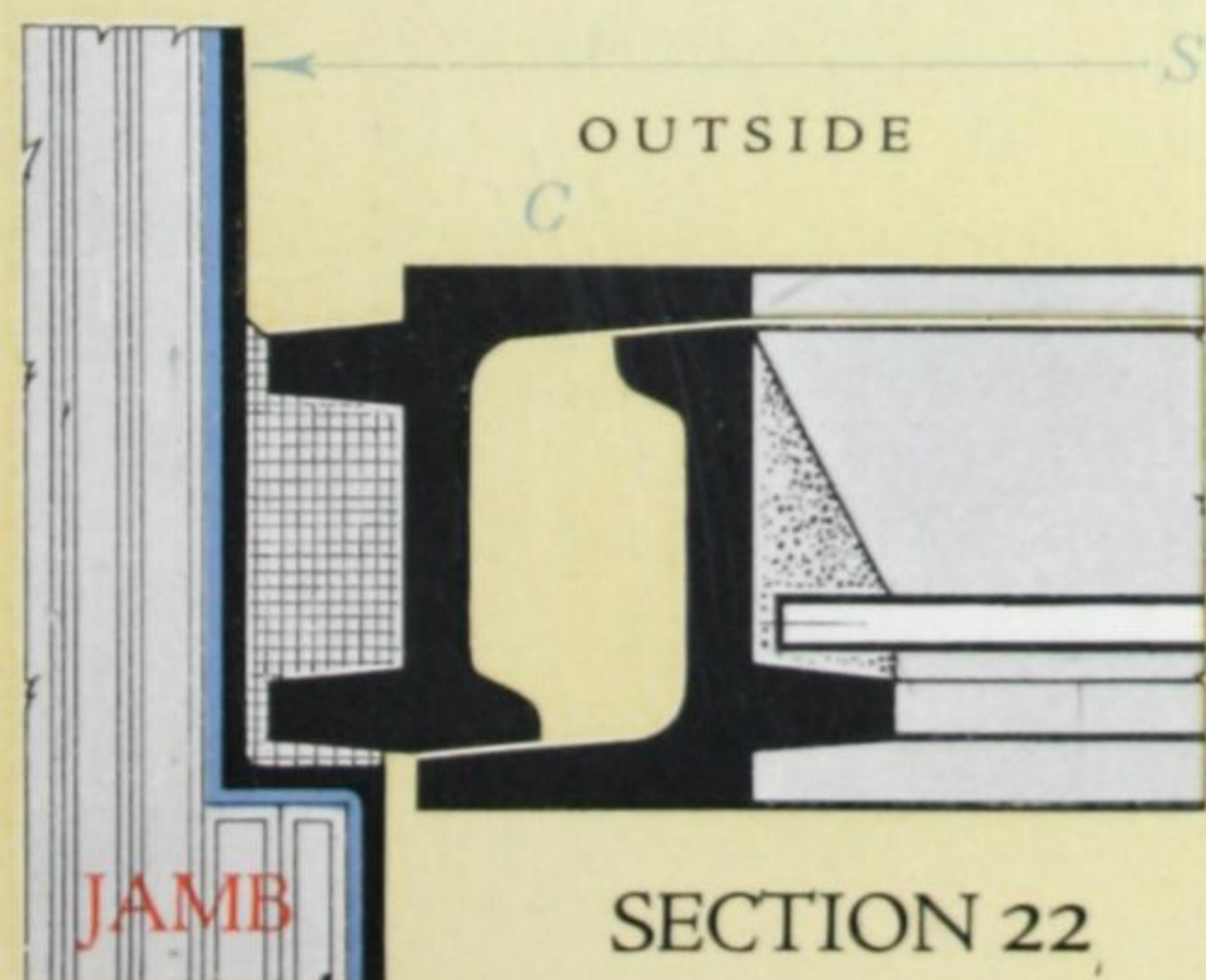
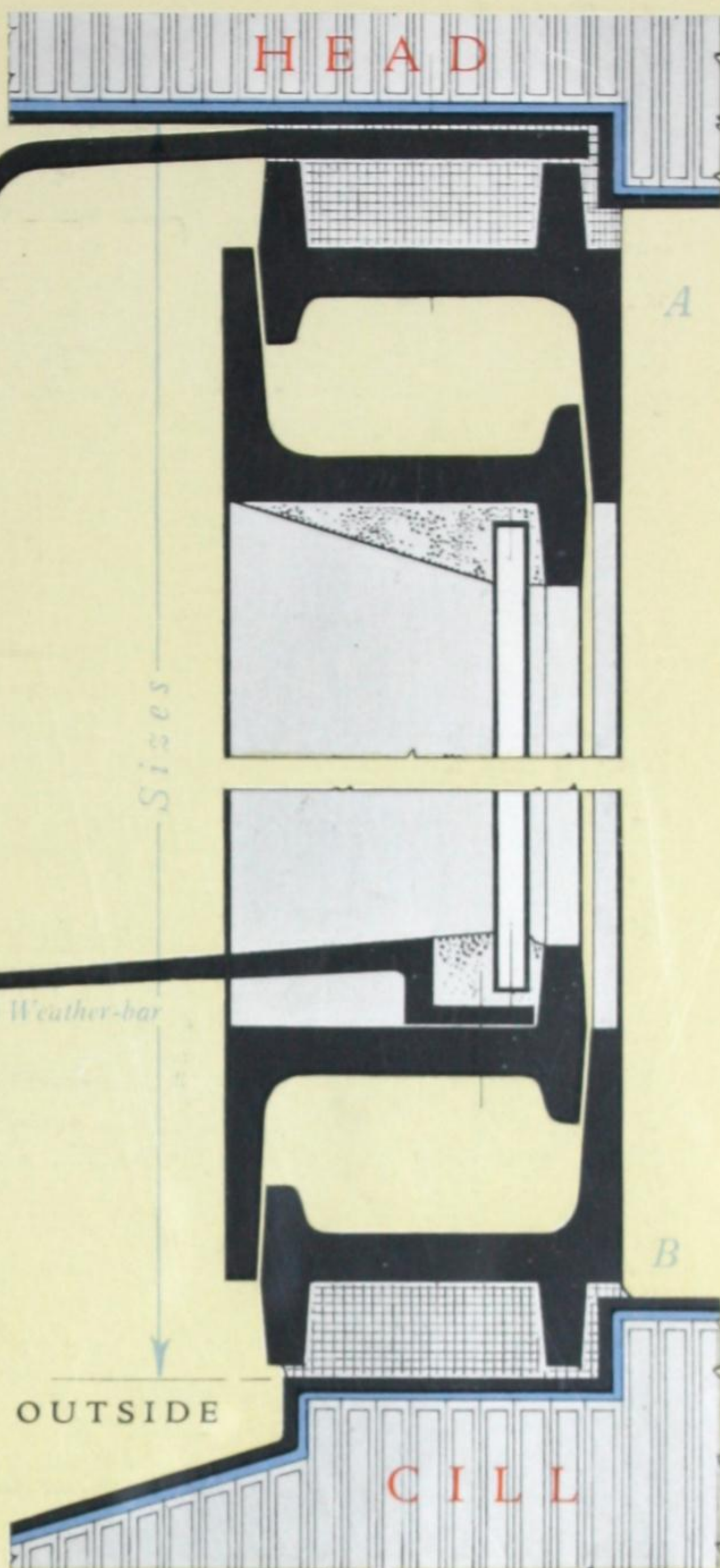
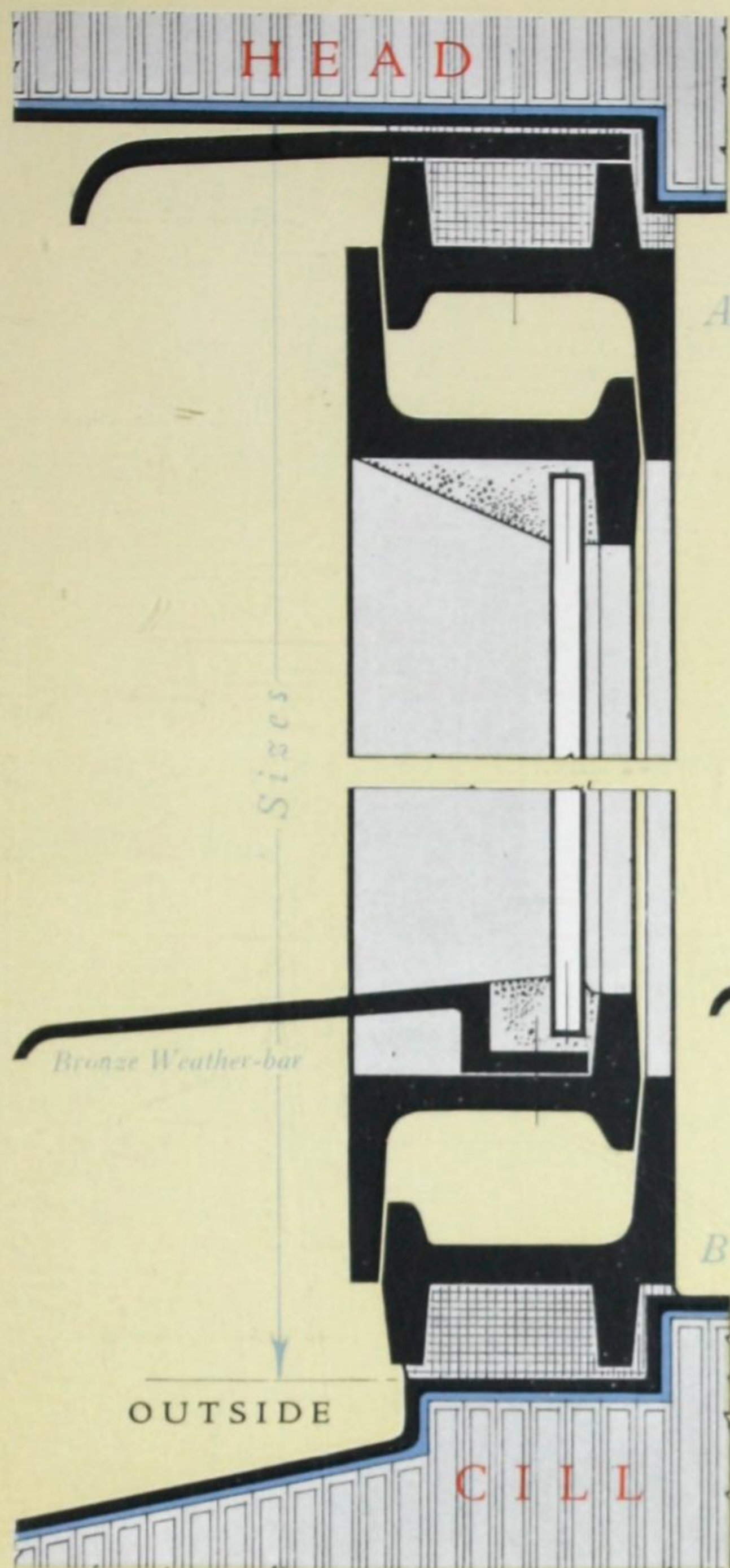
DETAILS · FULL · SIZE



SECTION 23

Maximum height, 5' 0" Maximum width, 2' 6"

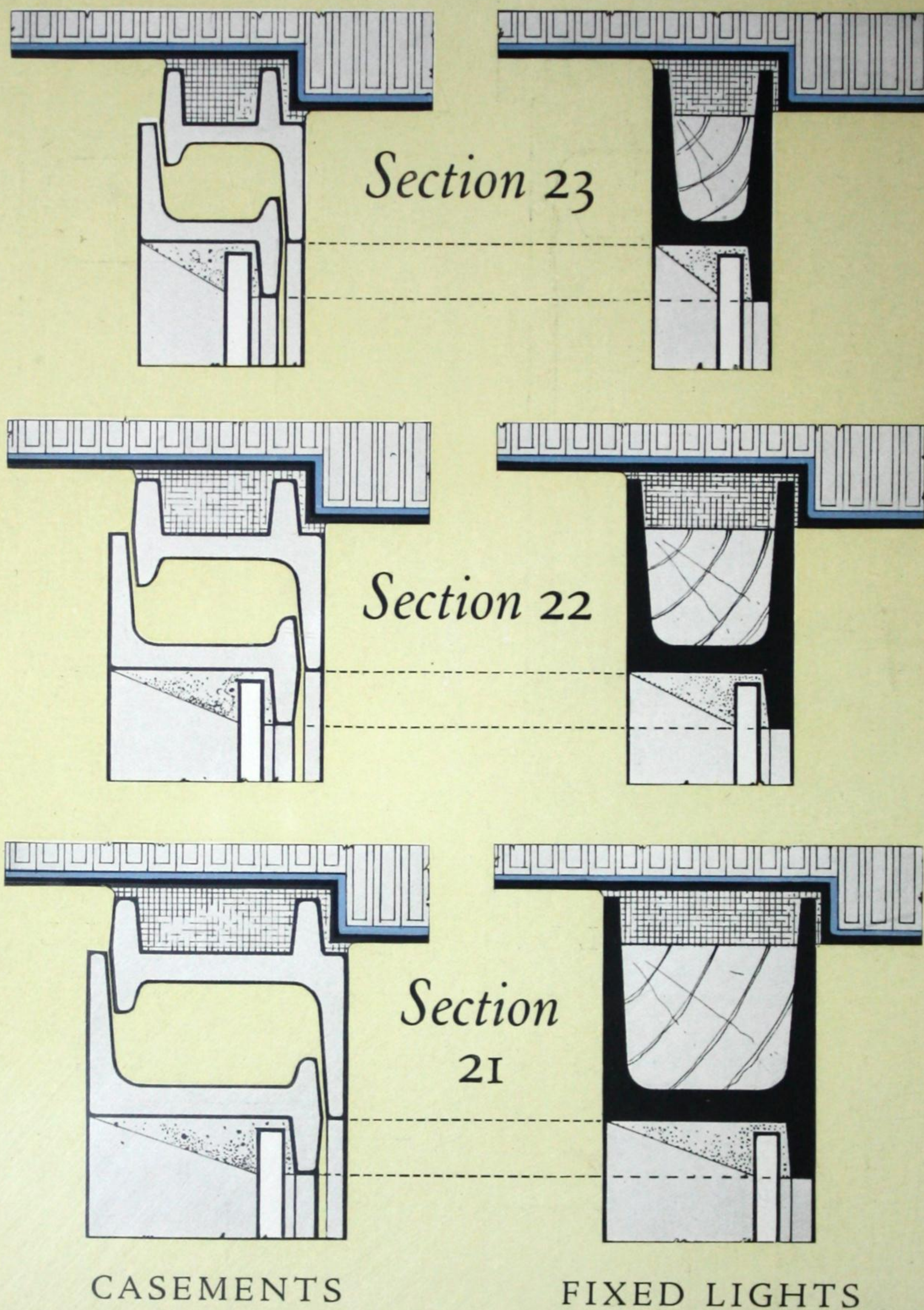
Hung on Pivots



Maximum height, 6' 0" Maximum width, 3' 0"

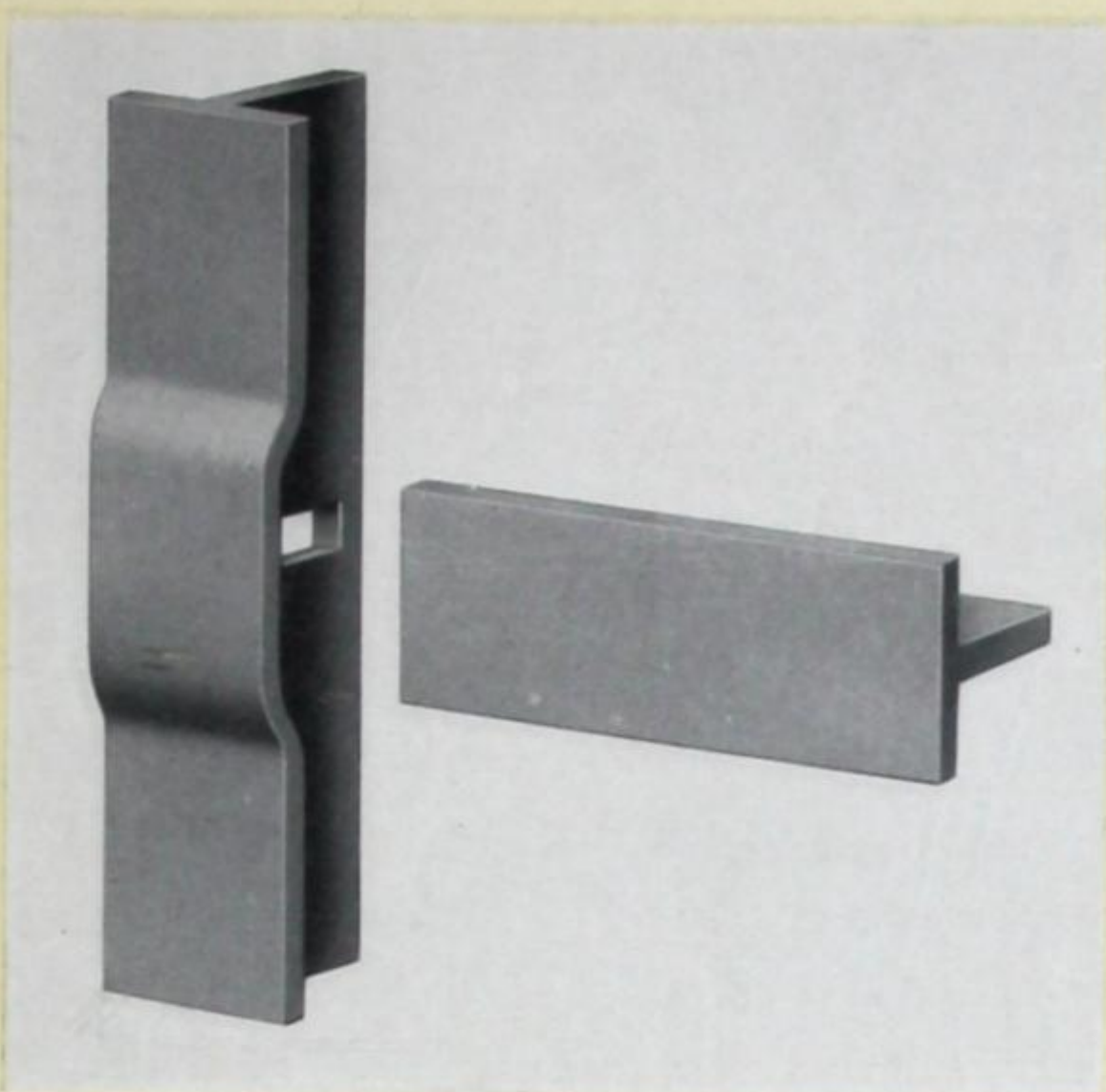
Maximum height, 8' 0" Maximum width, 4' 0"

Fixed Light Sections

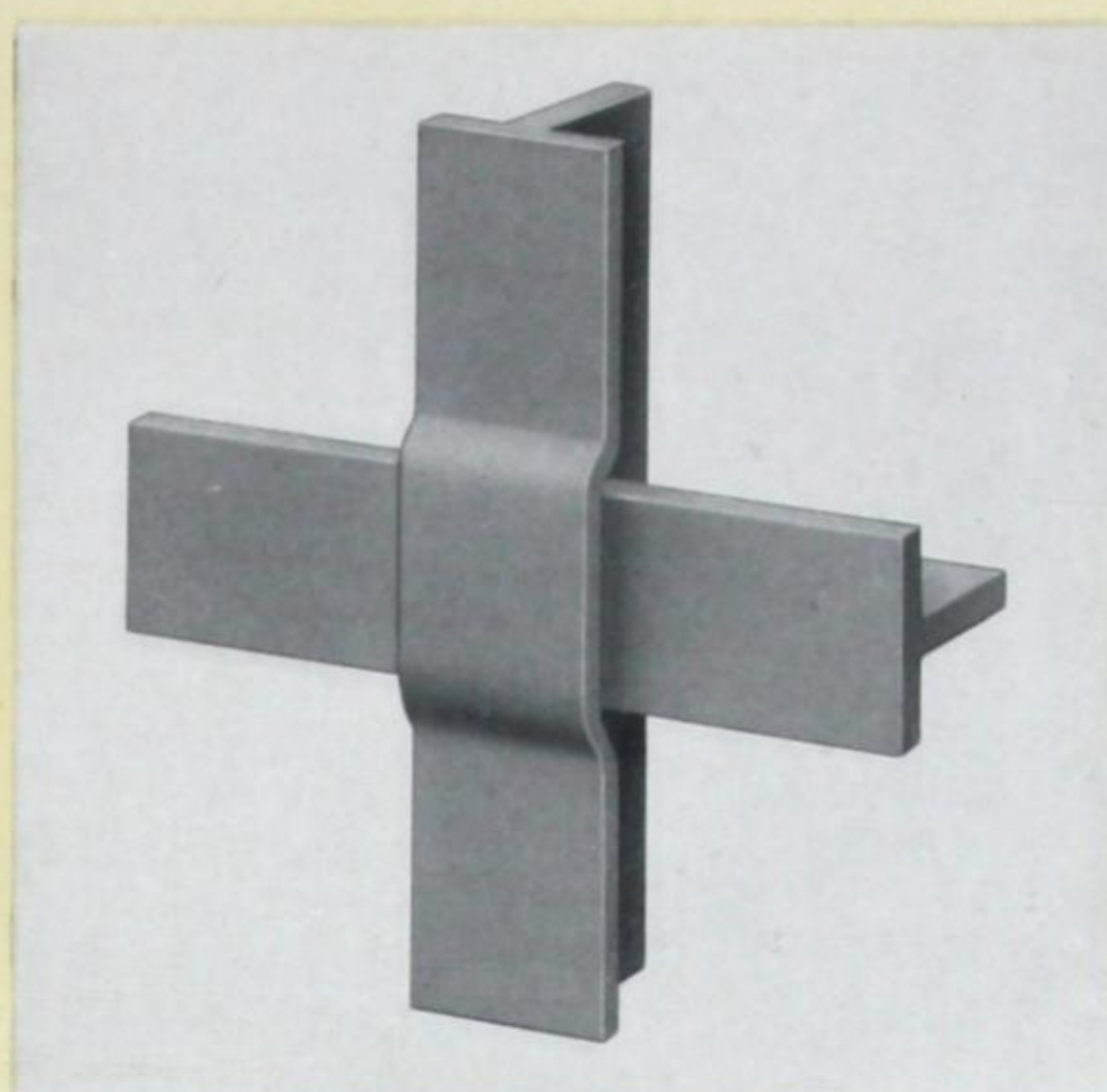


These fixed sections are employed where it is necessary to maintain the same sight lines and glass sizes in the fixed and opening portions of a window. An example may be seen in our Y type windows, page 24.

Lok'd Bar Joint & Astragals



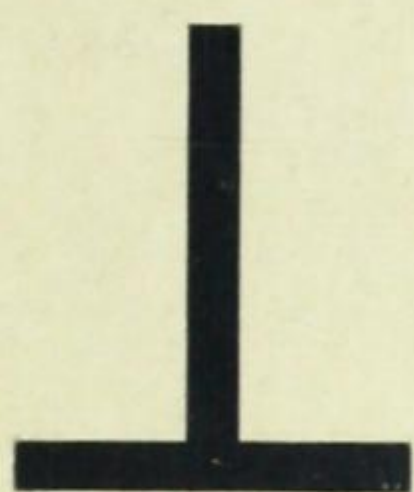
Astragals before threading.



Joint hydraulically closed.



$\frac{3}{4}'' \times \frac{7}{8}''$



$1'' \times 1\frac{3}{16}''$

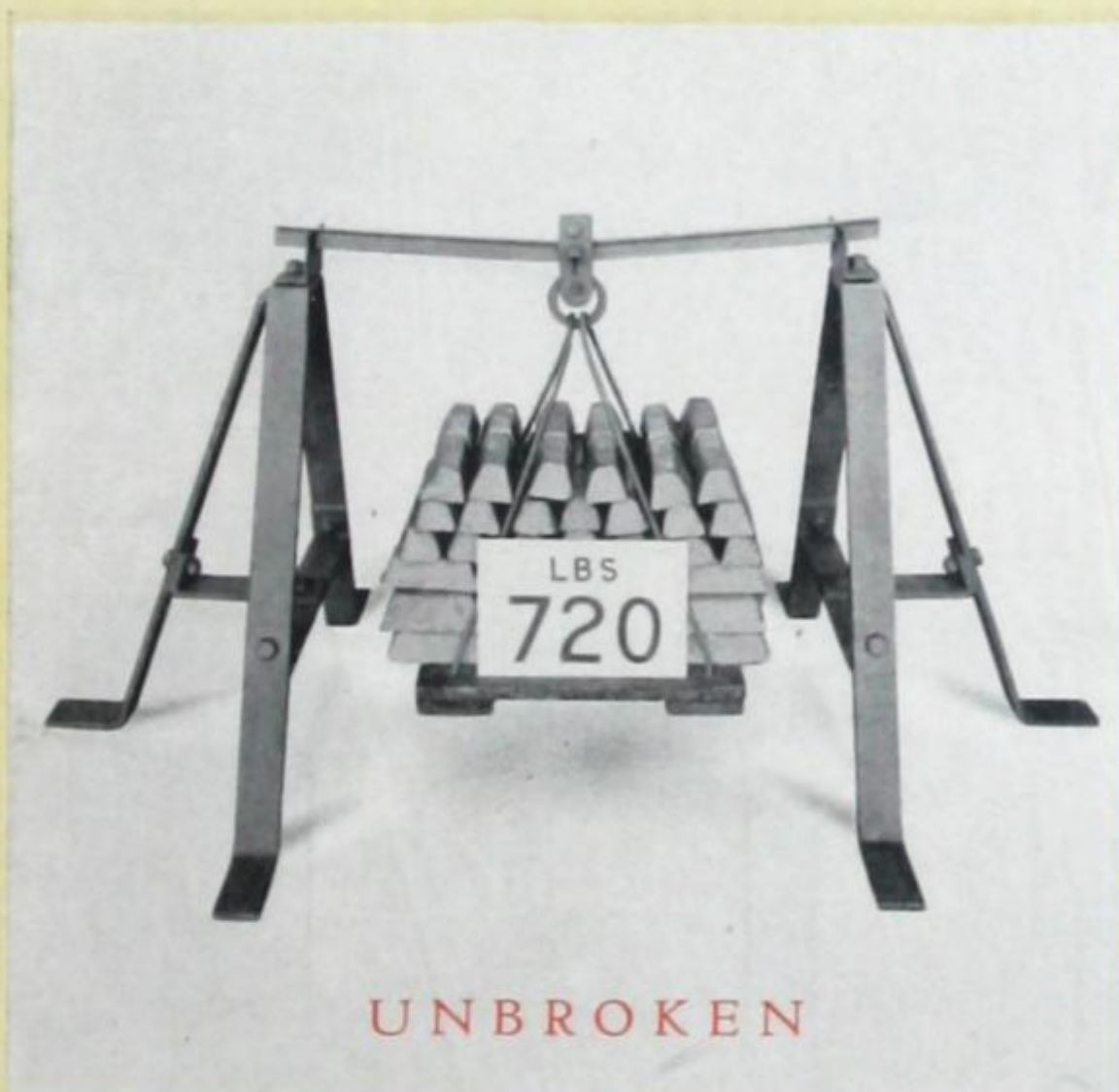


$1\frac{1}{4}'' \times 1\frac{1}{2}''$



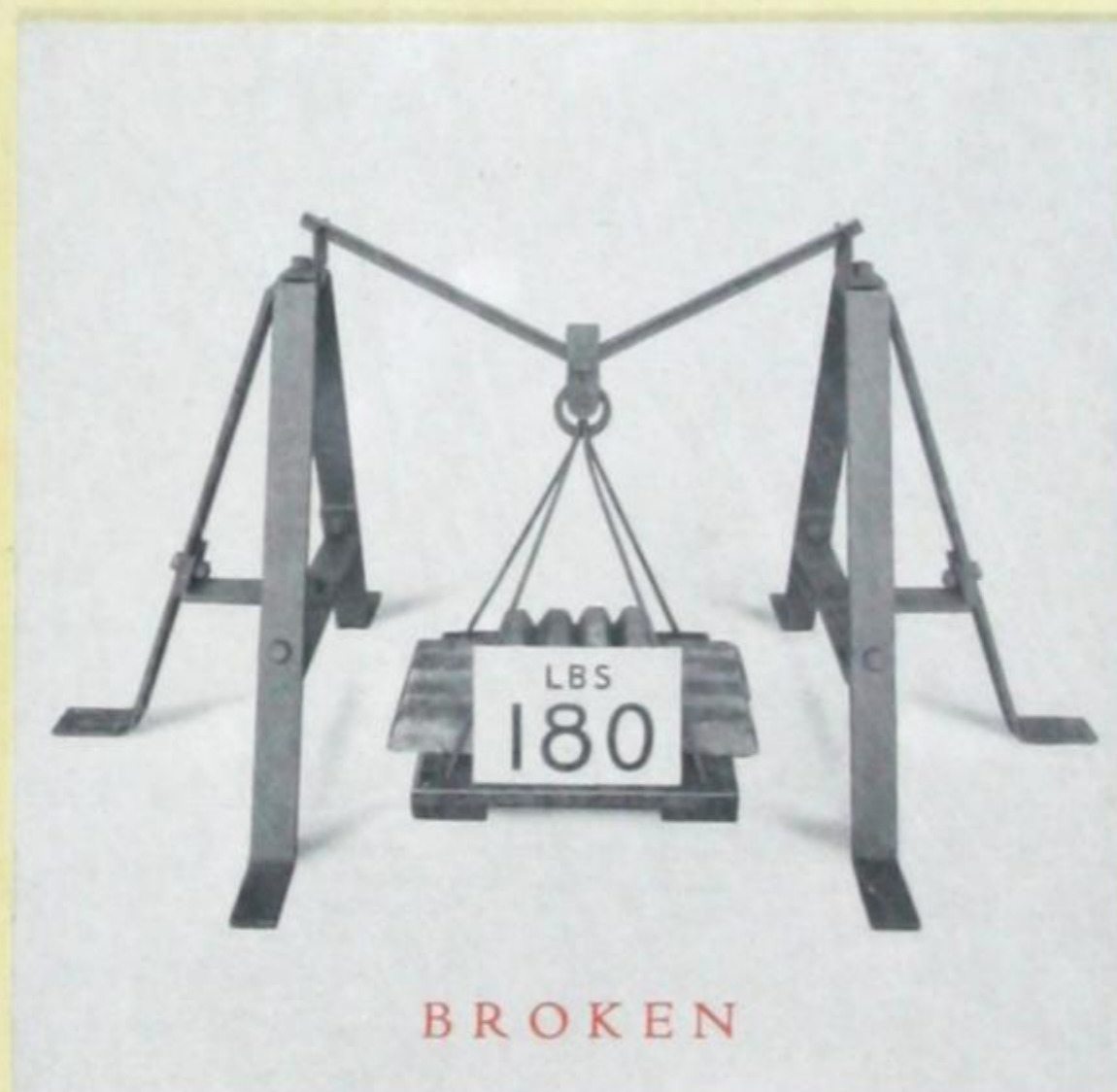
$\frac{3}{4}'' \times 1\frac{3}{8}''$
SASH SECTION

Any of these bars may be used for astragals in Hope's metal casements and windows.



UNBROKEN

HOPE'S LOK'D BAR JOINT



BROKEN

1" \perp FENESTRA TYPE JOINT

These two photographs are taken from the technical data in our sash catalogue, to illustrate the great strength of our Lok'd Bar Joint. This joint is used for all astragals in Hope's casements and windows.

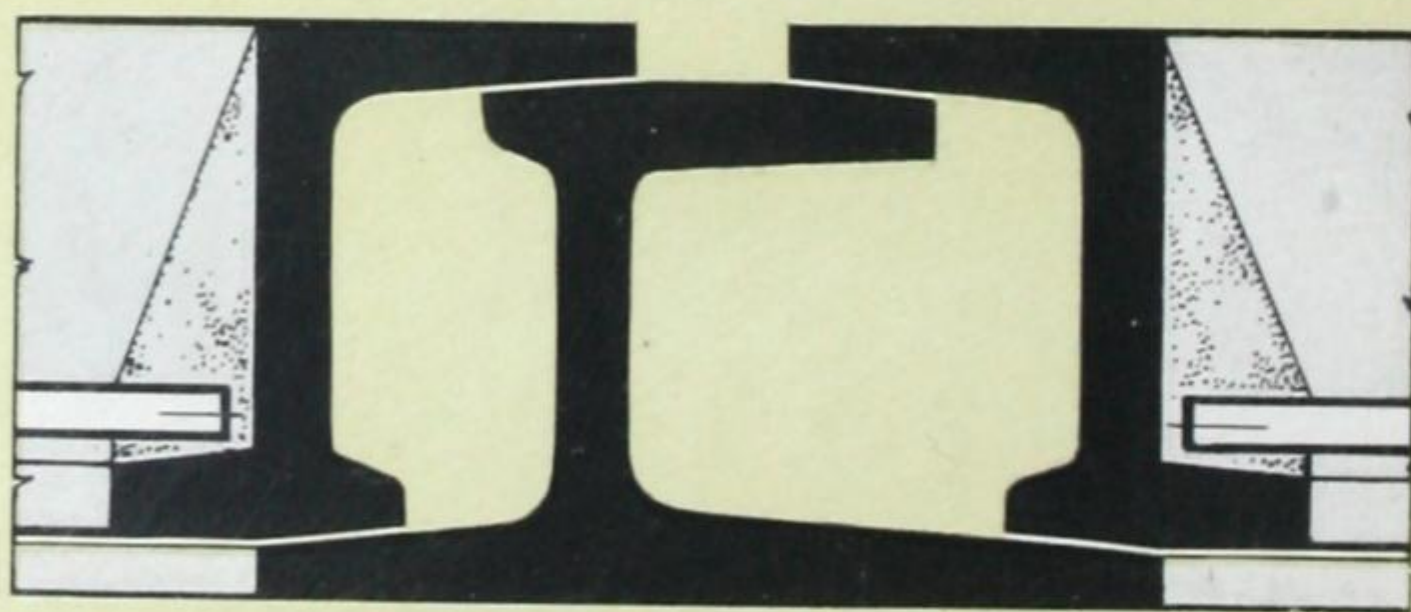
British Pat. No. 128067, Aug. 1918.

HOPE'S *French Casements*



With Mullion

FRENCH CASEMENTS, OPENING OUTWARDS, WITH FIXED MULLION, 5 FEET HIGH, OF SECTION 22, QUALITY 1, FITTED WITH BRONZE HANDLES AND SLIDING STAYS AND 1 GLAZING BARS, WITH HOPE'S PATENT LOK'D BAR JOINTS. THIS TYPE, WITH FIXED MULLION, IS RECOMMENDED FOR WINDOWS ABOVE GROUND FLOOR LEVEL.
FOR DETAILS OF HEAD, JAMBS AND CILL, AND ALL OTHER INFORMATION, SEE PAGES 8 AND 9.



FULL SIZE DETAIL *of* MULLION

Maximum Sizes

SECTION	21.	8 ft. 0 in. high by 5 ft. 0 in. wide
	22.	6 ft. 0 in. „ „ 4 ft. 3 in. „
	23.	5 ft. 0 in. „ „ 3 ft. 6 in. „

Opening Outwards



Without Mullion

FRENCH CASEMENTS, SECTION 22, QUALITY 1, 5 FT. HIGH, WITH BRONZE BOLTS ON THE LEFT HAND CASEMENT AND HANDLE No. 497 ON THE RIGHT HAND. THESE FITTINGS ARE SUPPLIED WHERE FRENCH CASEMENTS, WITHOUT MULLION, ARE FIXED AT USUAL CILL LEVELS, WITH THE ADDITION OF OUR DOUBLE-GRIP BOLT FOR CASEMENTS OVER 5 FEET HIGH. WHERE FRENCH CASEMENTS ARE FIXED AT FLOOR LEVEL, WE SUPPLY A CREMORNE BOLT TO THE RIGHT HAND CASEMENT.



F. S. DETAIL of MEETING BARS

Maximum Sizes

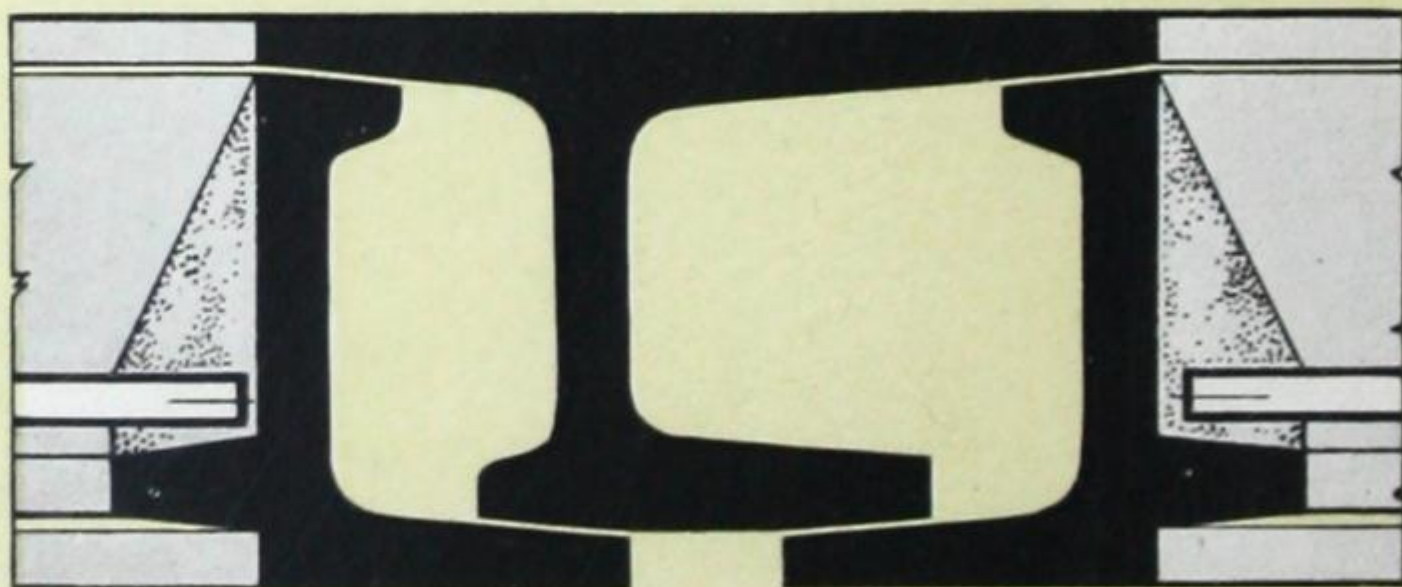
SECTION	21.	8 ft. 0 in. high by 4 ft. 6 in. wide
	22.	6 ft. 0 in. „ „ 3 ft. 9 in. „
	23.	5 ft. 0 in. „ „ 3 ft. 0 in. „

HOPE'S *French Casements*



With Mullion

FRENCH CASEMENTS, OPENING INWARDS, WITH FIXED MULLION, 5 FEET HIGH, OF SECTION 22, QUALITY 1, FITTED WITH BRONZE HANDLES AND SLIDING STAYS No. 224 AND 1 GLAZING BARS. . . . FOR DETAILS OF HEAD, JAMBS AND CILL, AND ALL OTHER INFORMATION, SEE PAGES 10 AND 11. . . .



FULL SIZE DETAIL of MULLION

Maximum Sizes

SECTION 21.	8 ft. 0 in. high by 5 ft. 0 in. wide
„ 22.	6 ft. 0 in. „ „ 4 ft. 3 in. „
„ 23.	5 ft. 0 in. „ „ 3 ft. 6 in. „

Ⓜ *Opening Inwards* Ⓜ



Without Mullion

FRENCH CASEMENTS, OPENING INWARDS, WITHOUT MULLION, SECTION 22, QUALITY 1, FITTED WITH CREMORNE BOLT AND SLIDING STAYS No. 224.

GLAZED WITH LEADED GLASS. THE CREMORNE BOLT SECURES BOTH CASEMENTS WHEN CLOSED, AND IS FITTED TO ALL FRENCH CASEMENTS WITHOUT MULLION, OPENING INWARDS.



F. S. DETAIL of MEETING BARS

Maximum Sizes

SECTION 21.	8 ft. 0 in. high by 4 ft. 6 in. wide
„ 22.	6 ft. 0 in. „ „ 3 ft. 9 in. „
„ 23.	5 ft. 0 in. „ „ 3 ft. 0 in. „

HOPE'S

OFFICE BUILDING WINDOWS

The foregoing pages illustrate the simple forms of our Sections 21, 22 and 23, as they are generally applied to buildings with mullioned windows designed in the Tudor tradition.

The next seven pages are given to composite windows made of the same sections, suitable for public and mercantile buildings with large plain window openings. They can be applied to brick, stone or concrete, and their advantages as compared with sliding windows may be briefly stated.

- (1) Gives the minimum obstruction to daylight.
- (2) Exclusion of rain and wind in all climates.
- (3) No rattling of casement whether open or closed.
- (4) No weights, pulleys or cords to get out of order.
- (5) Solid setting in the walls, leaving no space for dirt, insects or vermin. Wood frames unnecessary.
- (6) Easily opened and closed without soiling hands or straining at a heavy sash with a long pole.
- (7) Graded ventilation from 1" with Hope's patent two-point handle to 100% of the window.

The types illustrated are capable of considerable variation, and we will gladly supply drawings and estimates to meet Architects' requirements.

OPERATING GEAR

It is often desirable (particularly with very large windows) to operate the casements above transome with gear. We manufacture reliable and silent gearing in many forms, and illustrate some of these on pages 70 to 73.



This is a variation of our Z type window, of which we are supplying a large number for Messrs. Thomas Cook & Sons' new offices on the Devonshire House site, Piccadilly, London, to the design of Mr. Arnold Mitchell

H O P E'S *Composite*



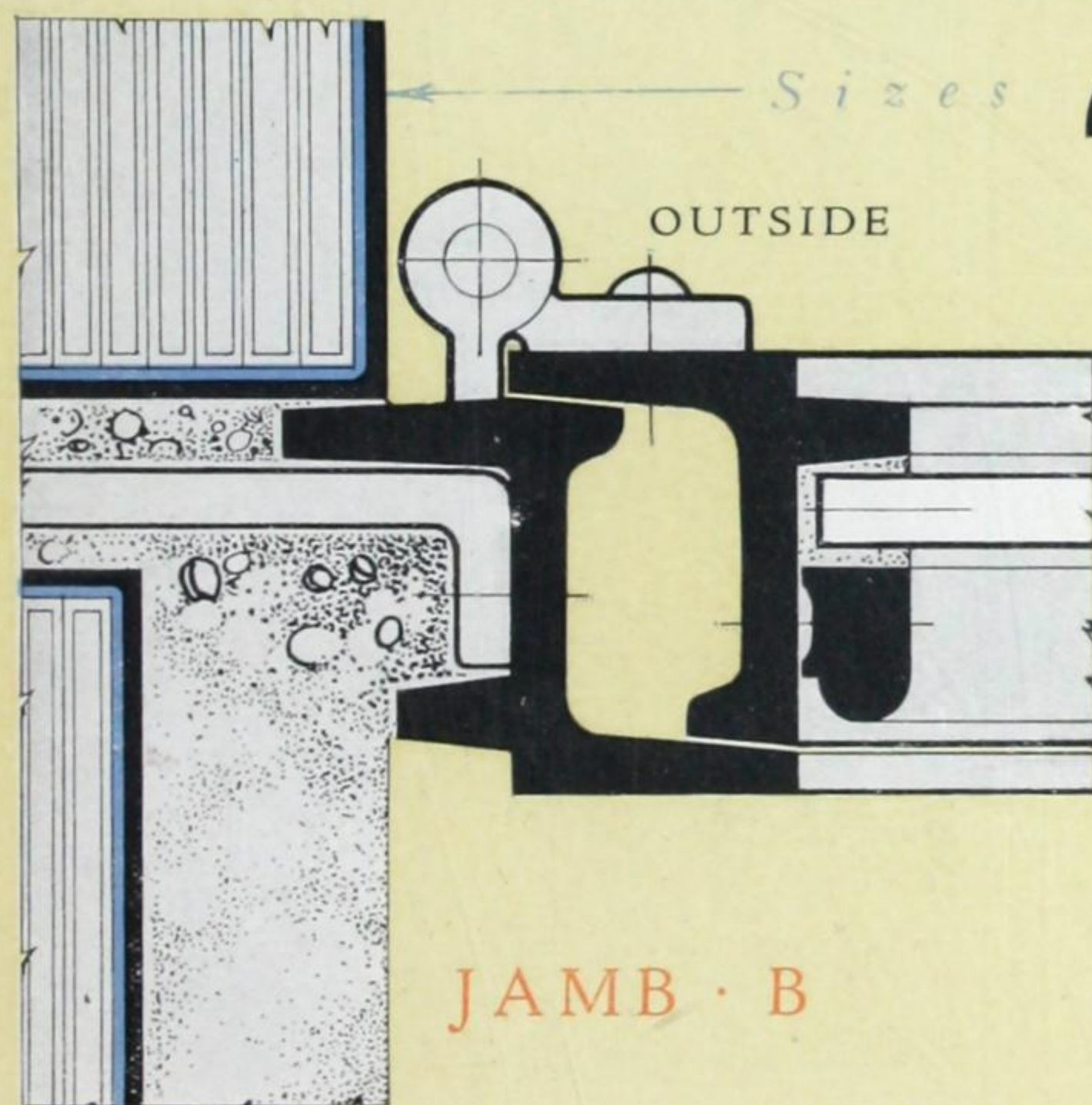
This design is appropriate for mercantile buildings in temperate and cold climates. It is watertight, does not rattle whether open or closed, and is easily controlled in any weather from 1 inch on Hope's patent Handle to 100% of the entire area. There are no cords, weights or pulleys, and it can be cleaned with safety from the inside.

Office Window · Design Z

ALL Hope's office windows are provided with flanged frame, as shewn on these full size details of Section 22, making a reliable and weatherproof joint with brickwork or masonry, and allowing space for internal plaster or trim. Glazing may be either inside, as shewn here, or outside. . . .



MULLION · A



JAMB · B

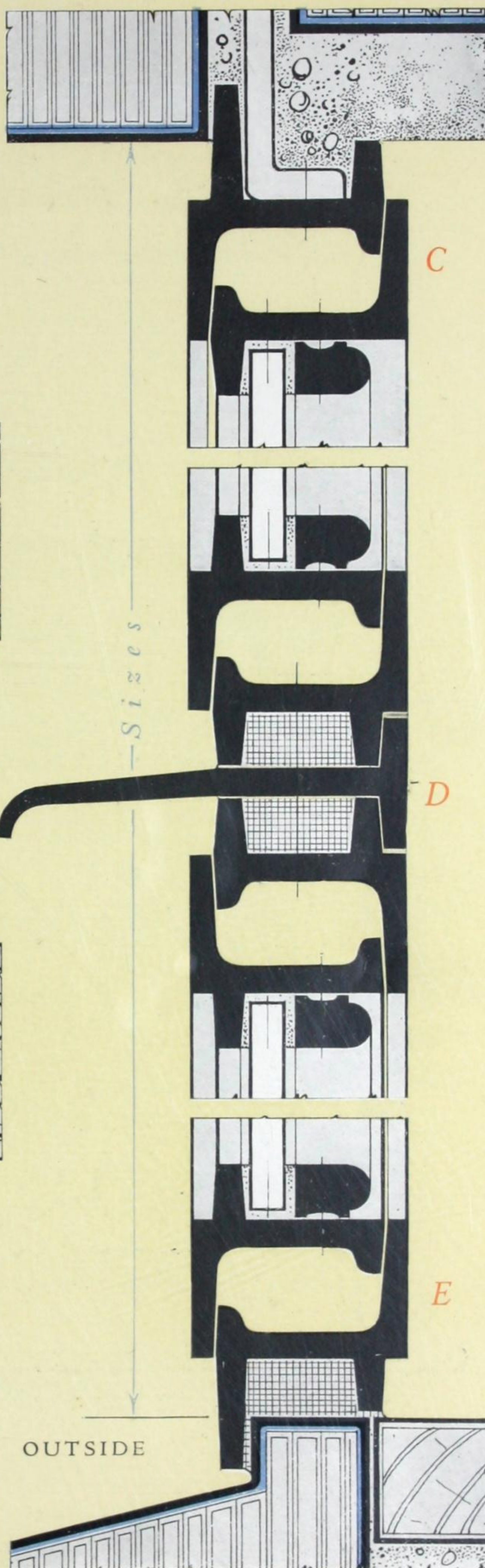
MAXIMUM SIZES

SECTION 21. 10ft. 0in. × 5ft. 0in.

„ 22. 8ft. 0in. × 4ft. 0in.

„ 23. 7ft. 0in. × 3ft. 6in.

Dimensions should be given in clear of openings, as shewn by arrows.



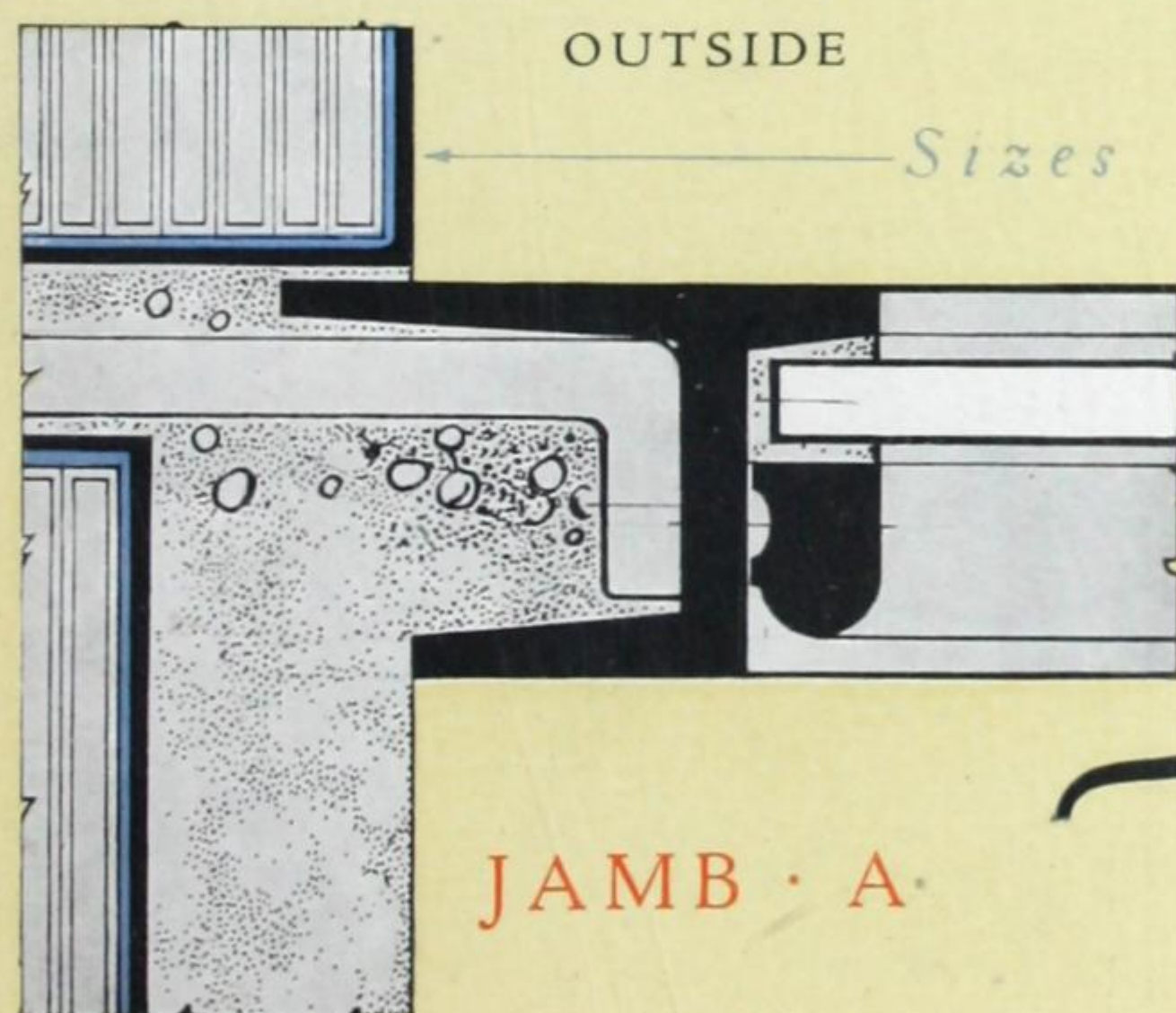
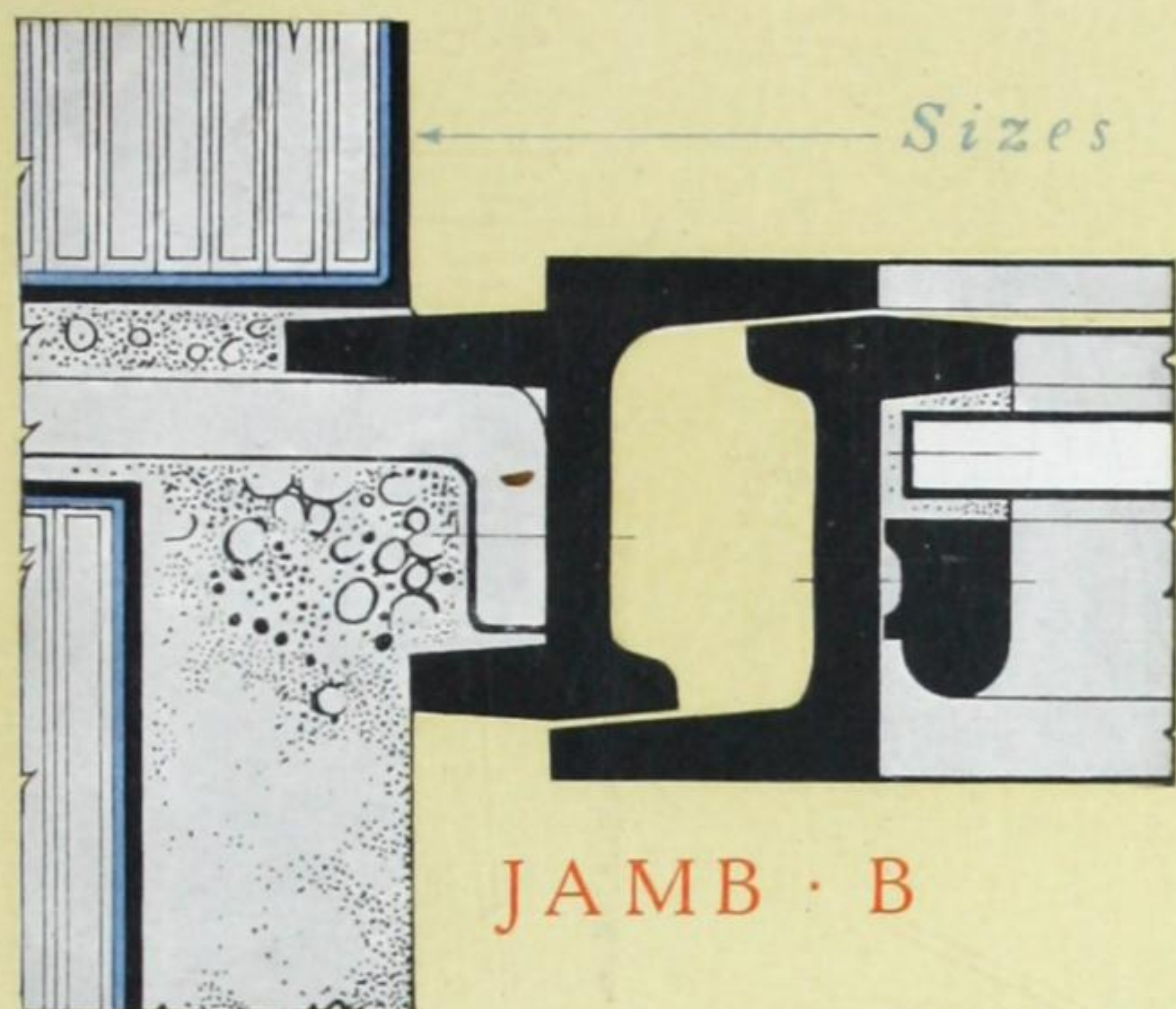
HOPE'S *Composite*



This is a rather cheaper window than Design Z on the previous page, about one-third of its area being fixed. It can be cleaned with safety from the inside. Both casements are hung on Hope's patent Cup Pivots, which never "seize" or jam, and provide a perfectly weatherproof joint. As with all our composite windows the setting in masonry is solid.

Office Window · Design Y

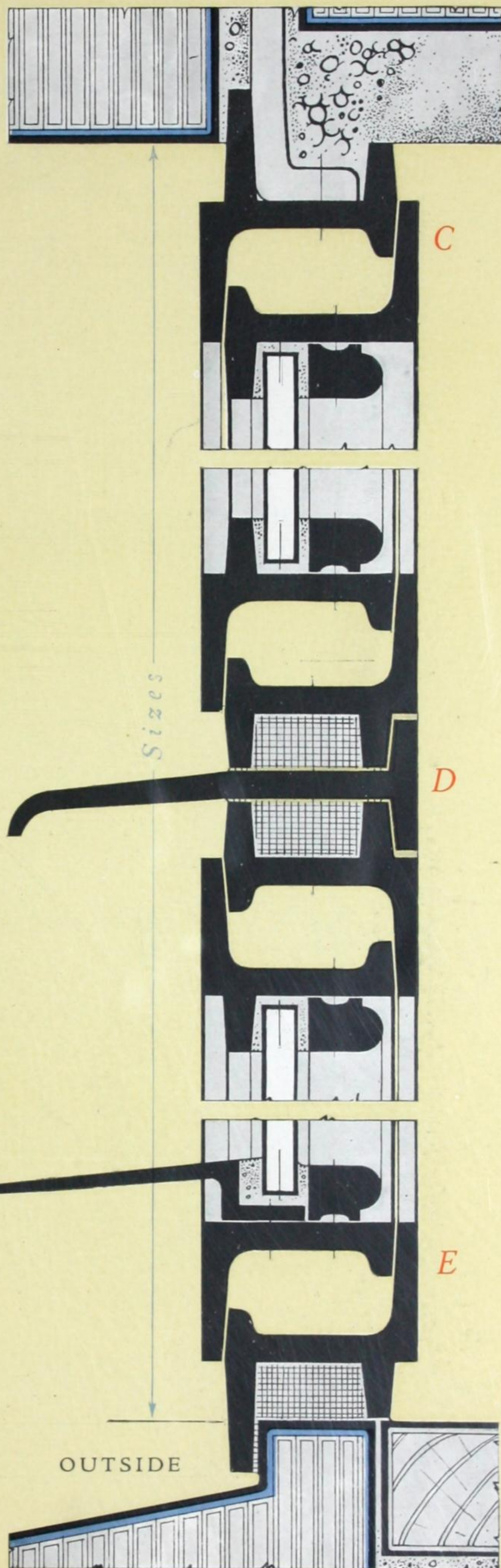
ALL Hope's office windows are provided with flanged frame, as shewn on these full size details of Section 22, making a reliable and weatherproof joint with brickwork or masonry, and allowing space for internal plaster or trim. Glazing may be either inside, as shewn here, or outside. . . .



MAXIMUM SIZES

- SECTION 21. 10ft. 0in. × 5ft. 0in.
 „ 22. 8ft. 0in. × 4ft. 0in.
 „ 23. 7ft. 0in. × 3ft. 6in.

Dimensions should be given in clear of openings, as shewn by arrows.



H O P E'S *Composite*



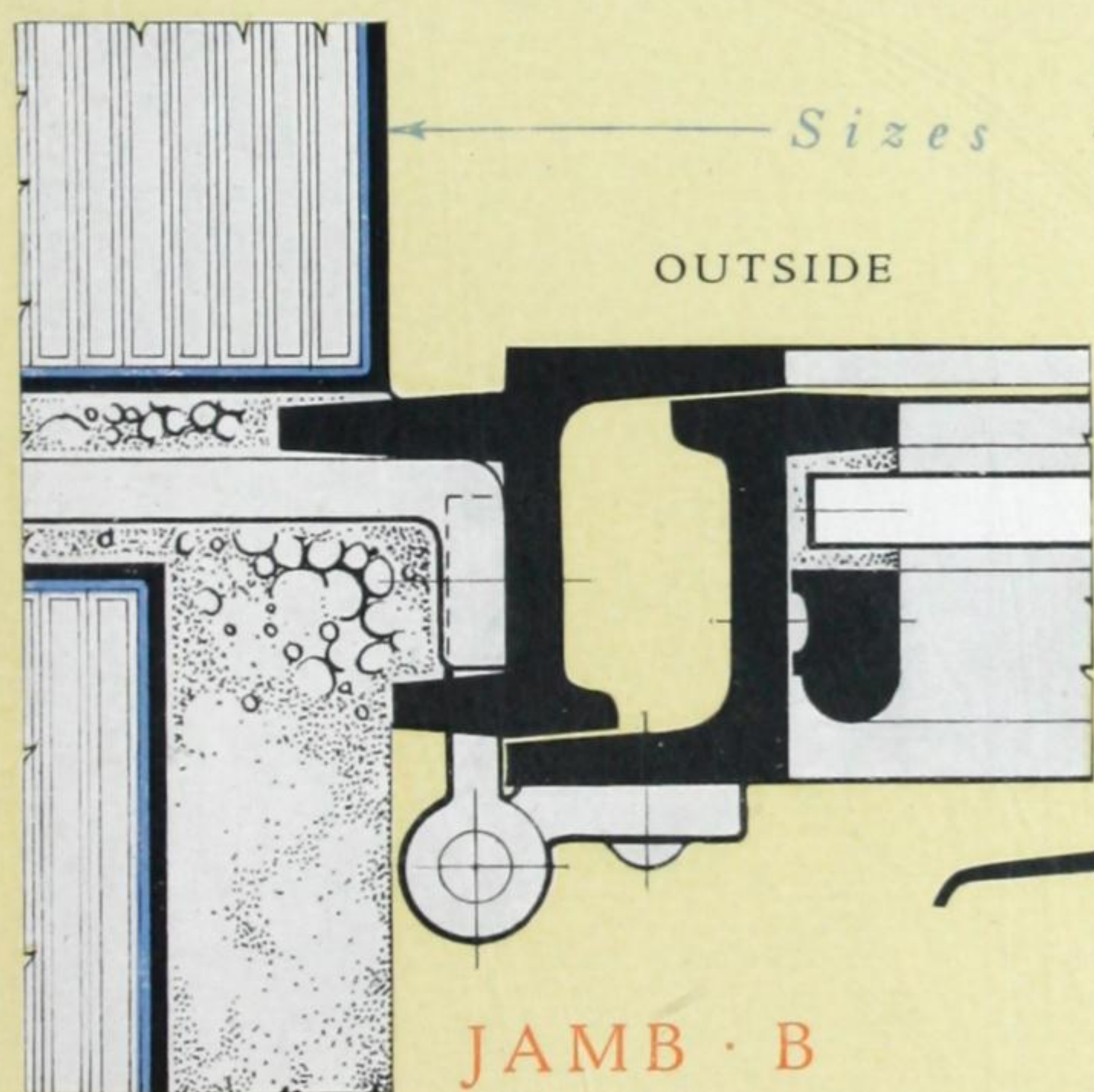
This is a suitable window for mercantile and public buildings in tropical climates, where it is necessary to have sun shutters on the outside. We do not advise the use of inward opening casements except to meet these conditions.

Office Window · Design W

ALL Hope's office windows are provided with flanged frame, as shewn on these full size details of Section 22, making a reliable and weatherproof joint with brick-work or masonry, and allowing space for internal plaster or trim. Glazing may be either inside, as shewn here, or outside. . . .



MULLION · A



JAMB · B

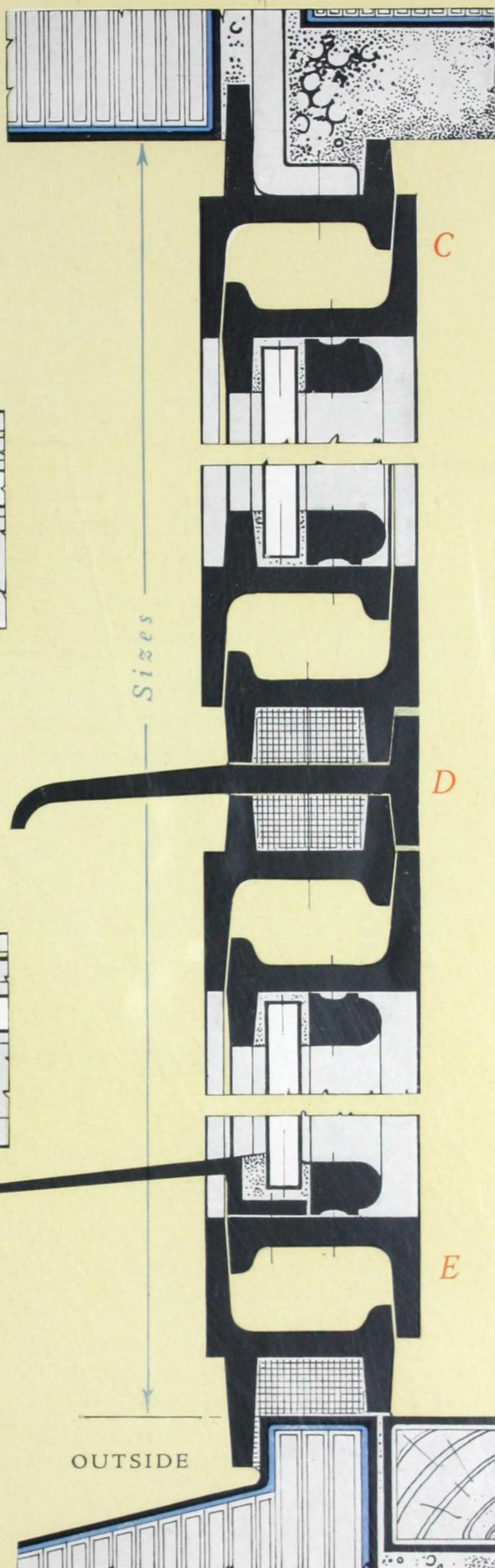
MAXIMUM SIZES

SECTION 21. 10 ft. 0 in. × 5 ft. 0 in.

„ 22. 8 ft. 0 in. × 4 ft. 0 in.

„ 23. 7 ft. 0 in. × 3 ft. 6 in.

Dimensions should be given in clear of openings, as shewn by arrows.



THE next seven pages are given to the Casement fittings which can be selected for use on the casements and windows illustrated in the foregoing pages. Any of the bronze fittings may be chosen for Quality 1 and any of the iron fittings for Quality 2.

All Hope's casements of Quality 1 are fitted with their patent Two-point Handles and their non-projecting Sliding Stay (No. 223). These two fittings ensure perfect control of a casement in any weather without rattling.

Architects who wish to be assured of their clients' satisfaction should specify Hope's without any qualification which would allow of the substitution of inferior makes.

Hope's patent Austral window is illustrated on pages 37 to 45.

Casement doors, pages 47 to 51.

Hospital windows, pages 52 to 55.

Miscellaneous matter, pages 56 to 82.

Photographs of buildings, page 83 to end.

HOPE'S

Casement Hardware

Quality. Only two qualities are made. Quality 1 is of bronze, polished and toned to a nut brown colour. Quality 2 is of iron, rust-proofed and blacked. Every fitting is made to stand hard and continuous wear. All working parts are accurately machined to gauge, and great care is taken to prevent looseness with wear.

Bronze Hardware. All bronze castings are made in our own foundry, of an alloy of copper, tin and spelter, of the British Naval Specification for bearings. The uniform colour and strength of our bronze castings are due to the purity of our alloy: no scrap or inferior metal is used. Stay bars, weather bars, bolt rods, etc., are made of extruded bronze.

Iron Hardware. Those patterns which do not lend themselves to forging (*vide* handles 497, 1393) are made of the best quality malleable iron, but handles and stays 206, 219, etc., are made of hand-forged wrought iron. We never employ malleable iron to imitate blacksmith's work.

Note. We have discarded from our range of standard fittings several of the handles, backplates and stays which were illustrated in our last catalogue, and have retained those which combine simplicity of form and convenience in use. We have been guided by the belief that modern casement fittings should be simple and inconspicuous, and great care has been taken with all our models to see that they are appropriate to their purpose with unimpeachable working parts. Hope's fittings cost a little more than ordinary "brass-foundry," but they add a very small amount to the cost of a new building, and insure the owner against any expense for repairs.

Hand-forged Fittings. On pages 66, 67, 68 and 69 we illustrate a number of fittings of old English style, and while these do not afford the same variety of adjustment as our Standard Hardware, they are thoroughly well-made and are recommended as the best possible fittings of their class. The designs are either based upon old examples, or are produced in the same spirit.

The fittings in this catalogue are only supplied with our Metal Casements. A special catalogue of Hardware for Wooden Casements will be sent on application.

HOPE'S *Hardware*



Casement fitted with HOPE'S PATENT TWO-POINT HANDLE, open 1 inch for ventilation.

Construction

Bored and faced on both sides of boss, mounted on pin (cast in one piece with the back plate) and secured with cap and washer, which prevent looseness with wear. The quadrant and stop limit the movement to the quarter of a circle necessary for opening and closing casement.

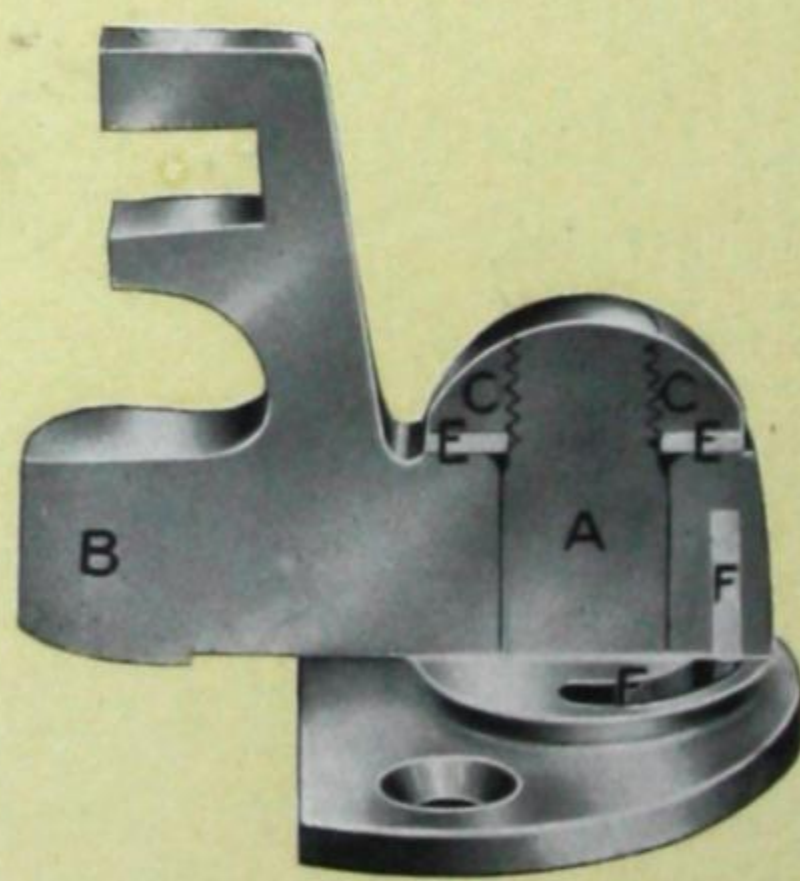
PATENT TWO-POINT HANDLE

A perfect casement should be weathertight when closed and made to set open for ventilation at any angle without rattling.

The stays should not project into the room more than $2\frac{1}{2}$ inches whether the casement is open at any angle or closed.

The combination of Hope's patent two-point handle and their non-projecting sliding stay provides this ideal of casement perfection. . . .

All casements, Quality 1, are fitted with these devices.

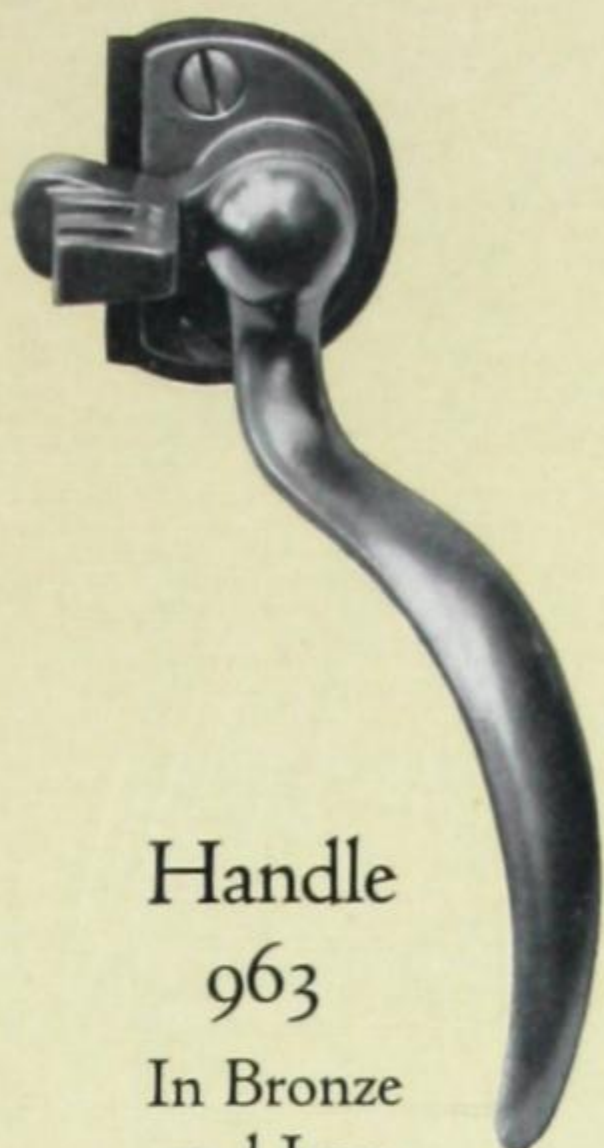


A Pin and Plate. B Boss. C Cap.
E Washer. F Stop and Quadrant.

Bronze & Iron Handles



Handle
497
In Bronze
and Iron



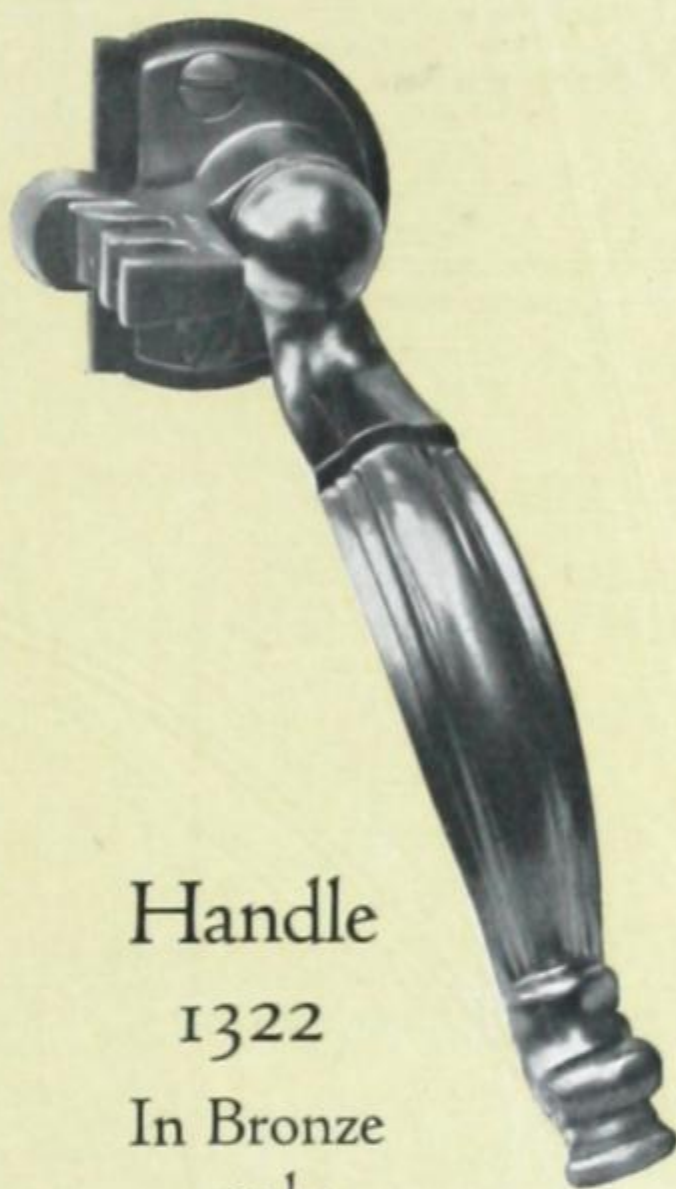
Handle
963
In Bronze
and Iron



Handle
1703
In Bronze
and Iron



Handle
1704
In Bronze
only

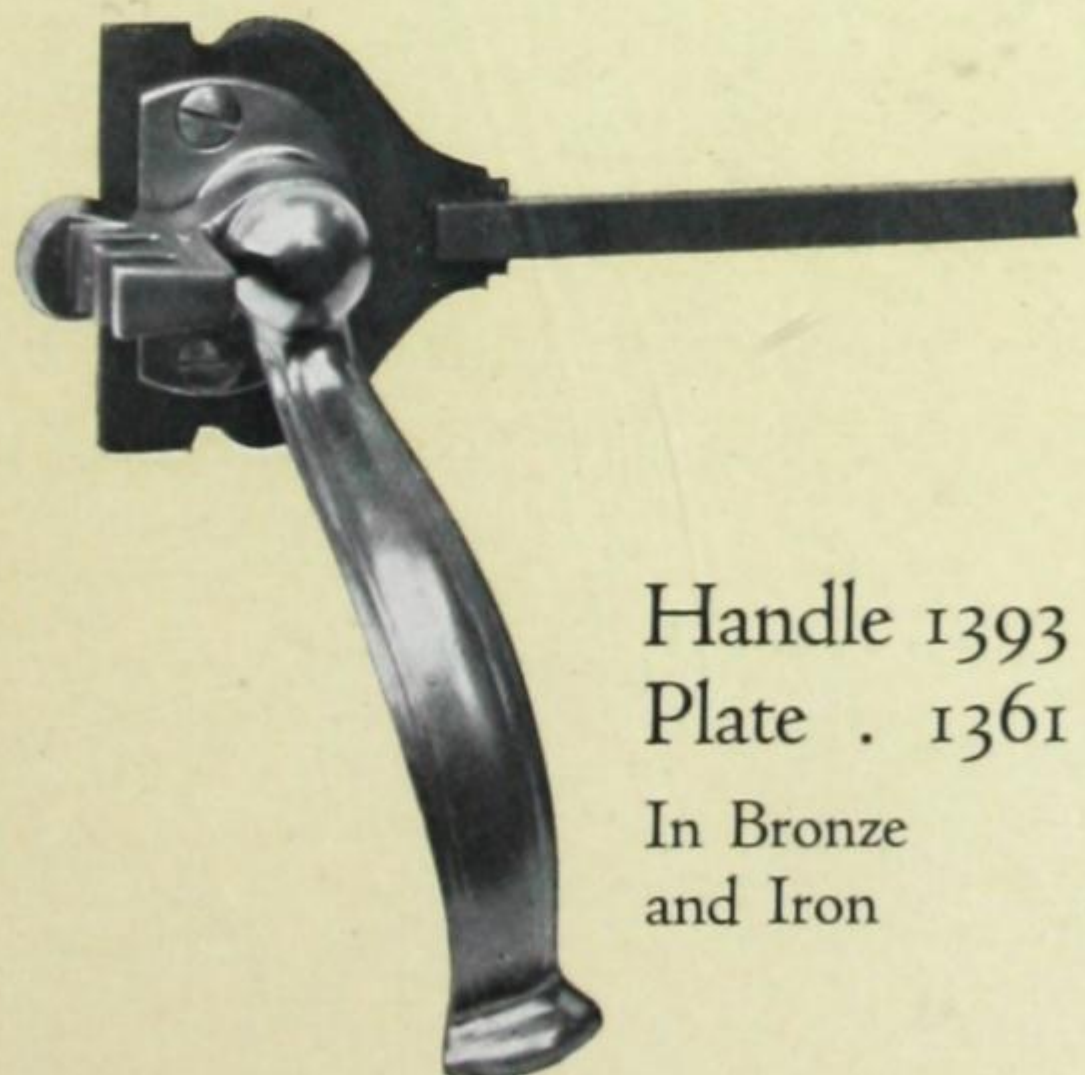


Handle
1322
In Bronze
only

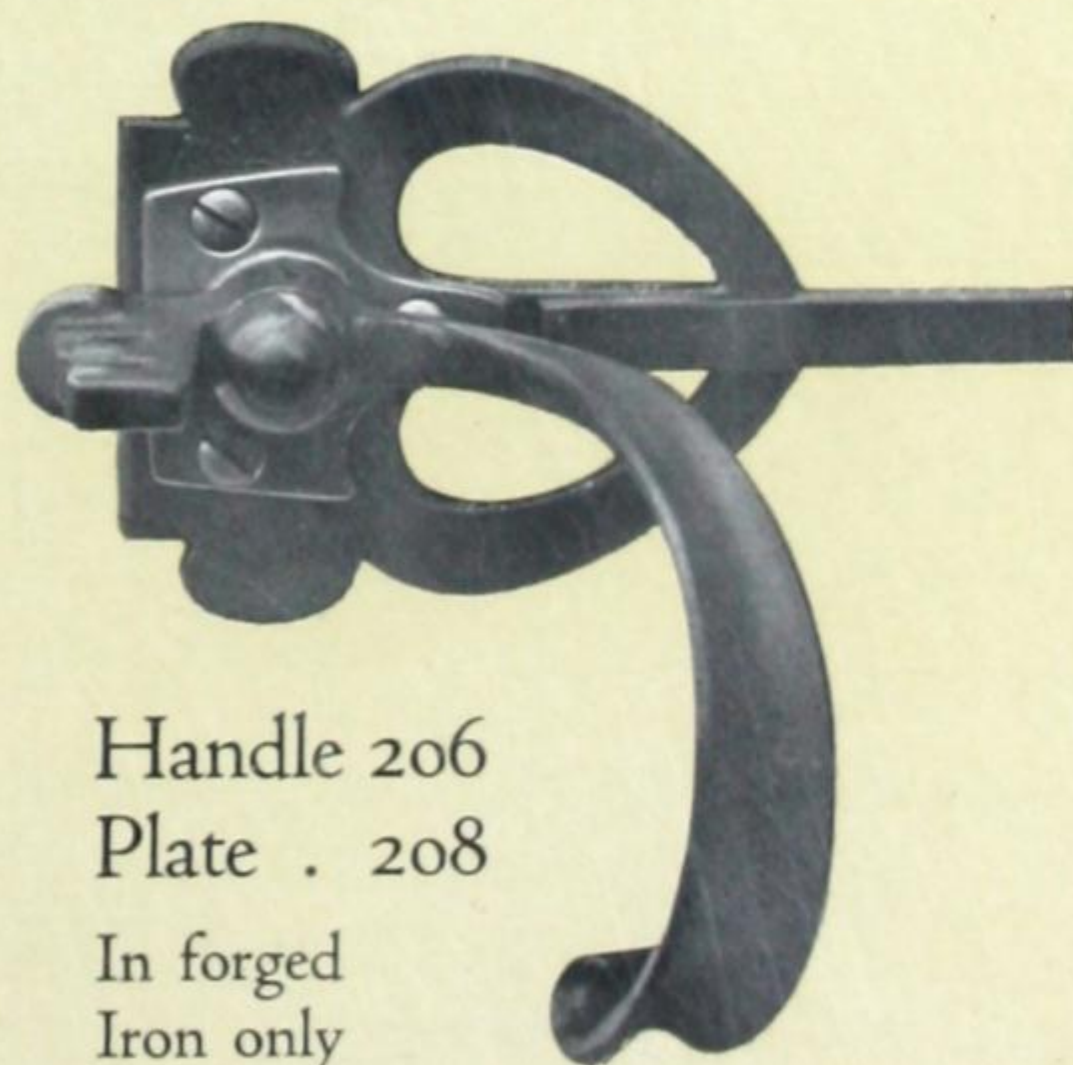


Handle
1323
In Bronze
only

Plate 50 to all the above.

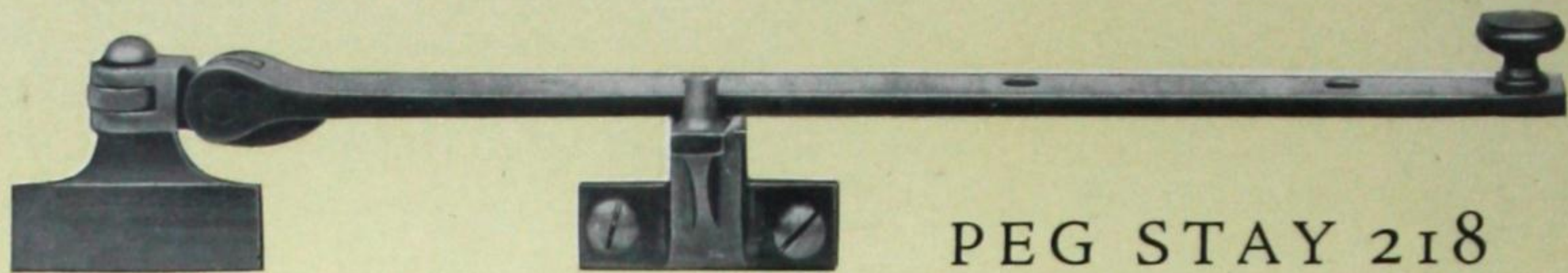


Handle 1393
Plate . 1361
In Bronze
and Iron



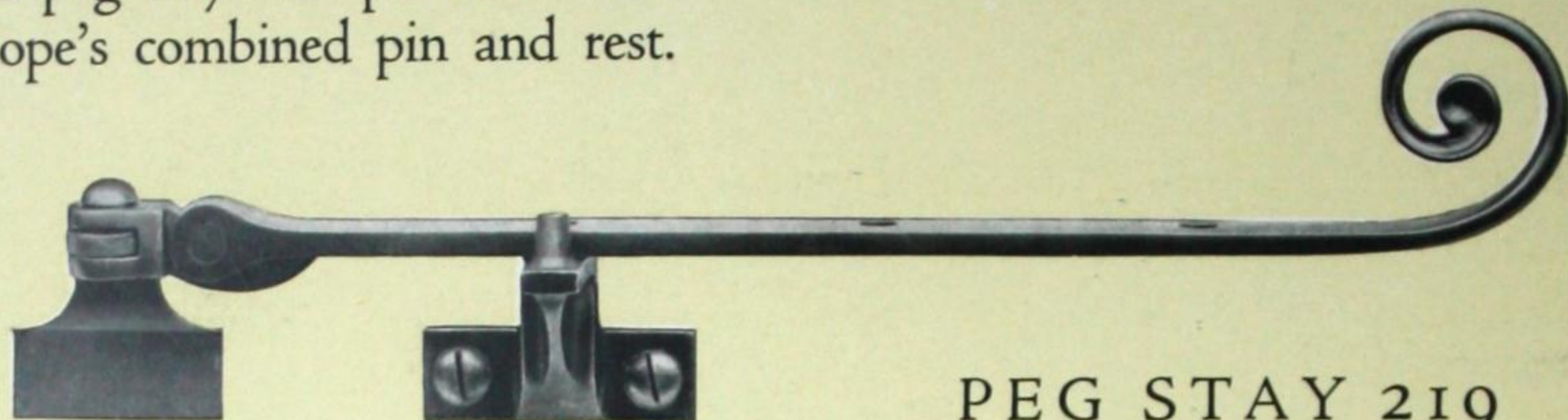
Handle 206
Plate . 208
In forged
Iron only

HOPE'S *Casement Stays*



PEG STAY 218

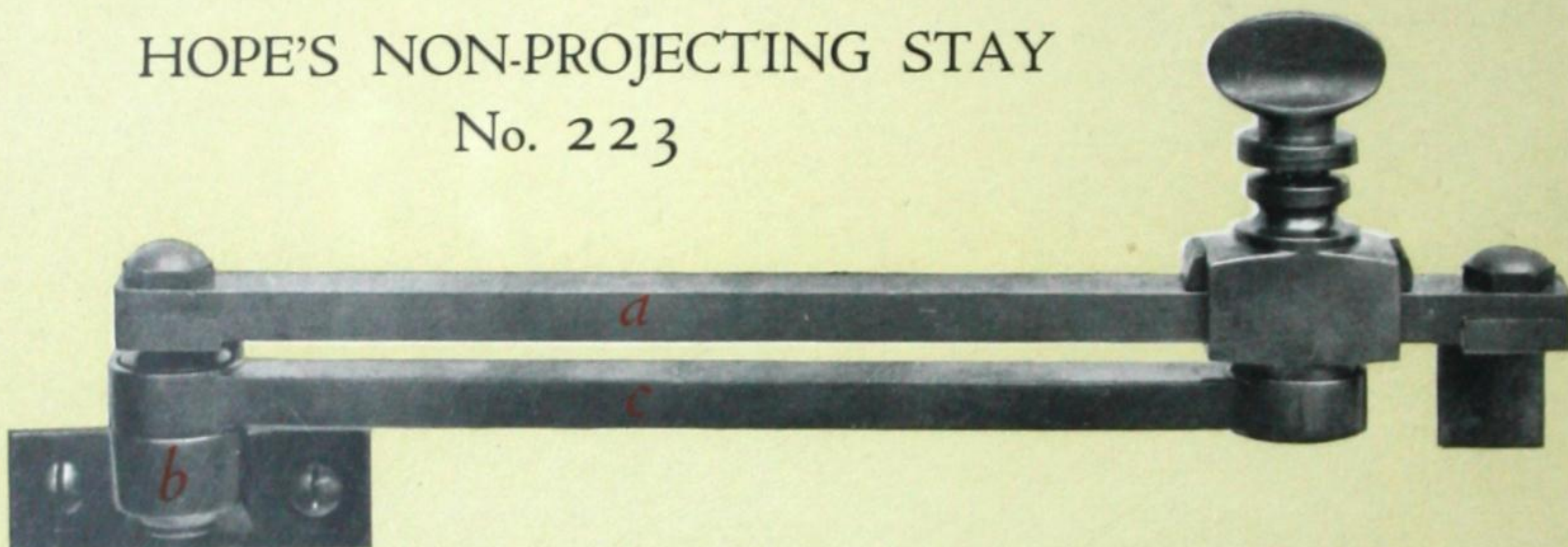
All peg stays are provided with Hope's combined pin and rest.



PEG STAY 219

Either of these patterns in wrought iron may be used for side hung and top hung casements of Quality 2, and either may be used in bronze for top hung casements of Quality 1 in substitution for cam opener if desired.

HOPE'S NON-PROJECTING STAY
No. 223



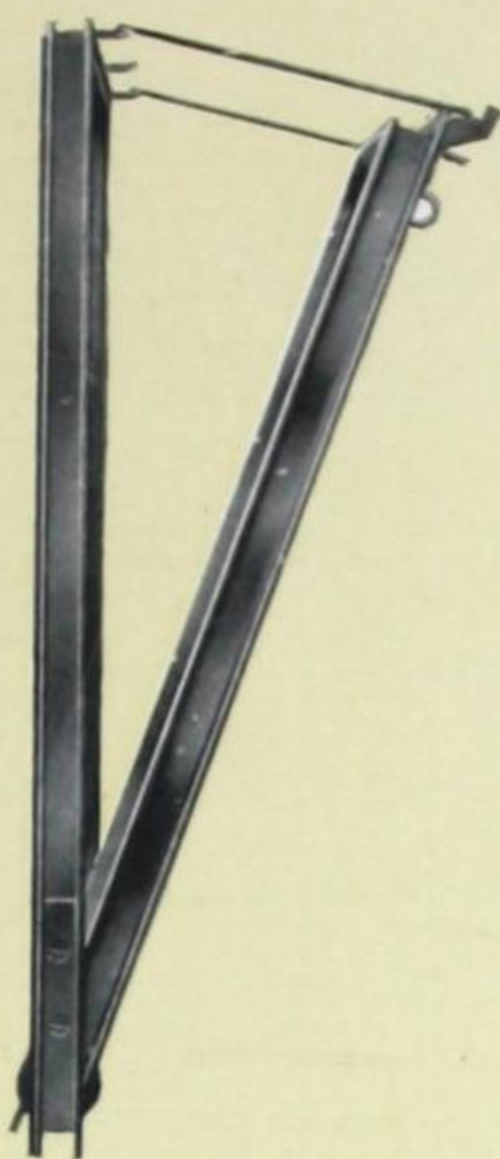
The box, screw, friction plate, bar (a), all set screws and bearing pins are of solid bronze. The bracket (b) and bar (c) are of polished and rust-proofed iron, finished black.

This is our standard pattern for all casements of Quality 1. It holds the casement rigidly, and does not project into the room at any angle of opening.

For Quality 1a, the bar (a) and bracket (b) are made of solid bronze.



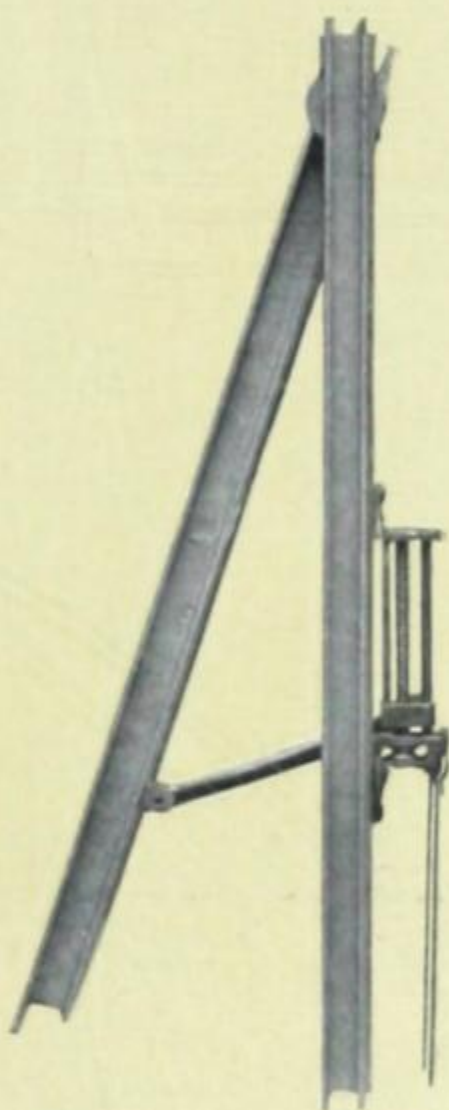
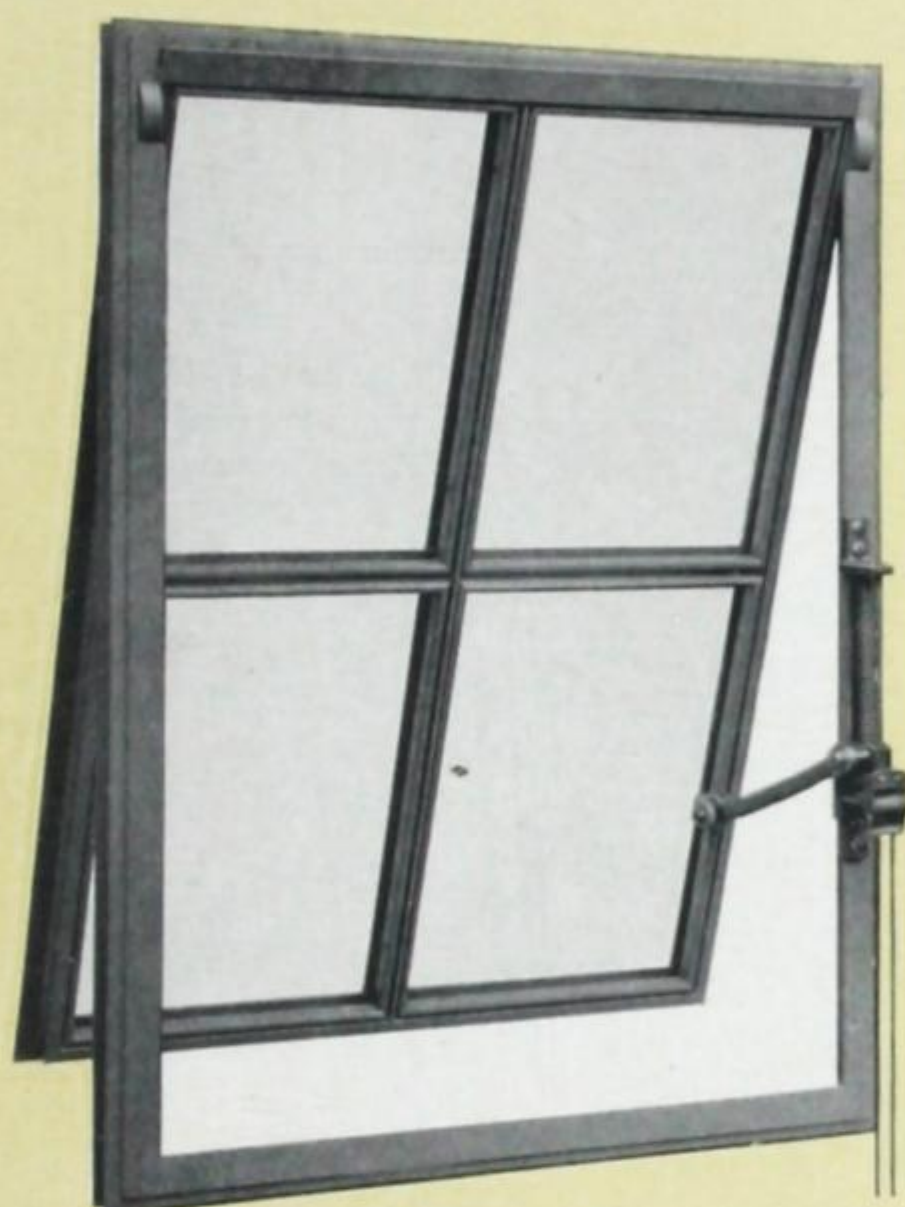
Transome Hardware



HOPE'S PASSABLE ARMS

No. 1714

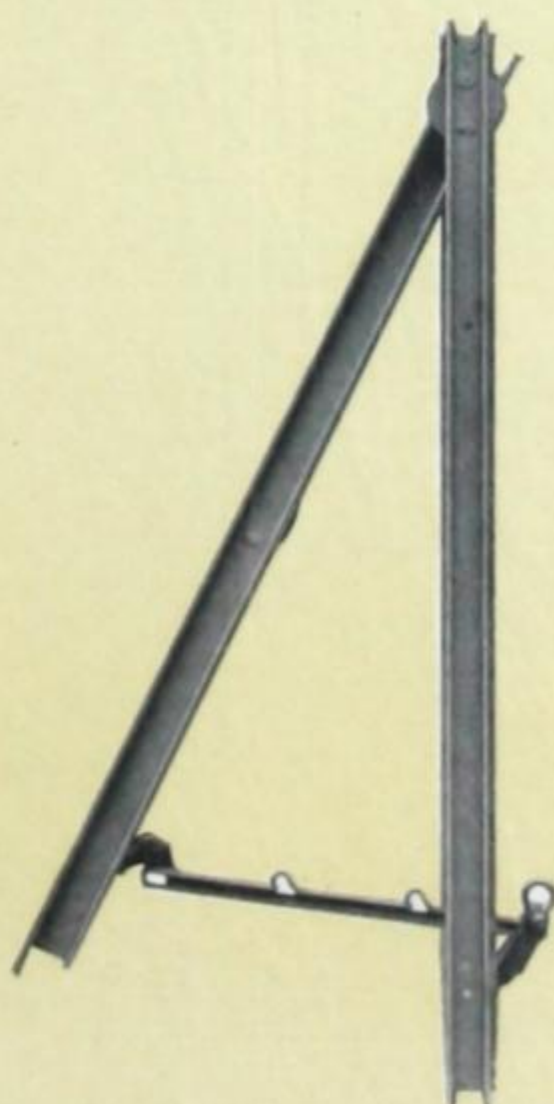
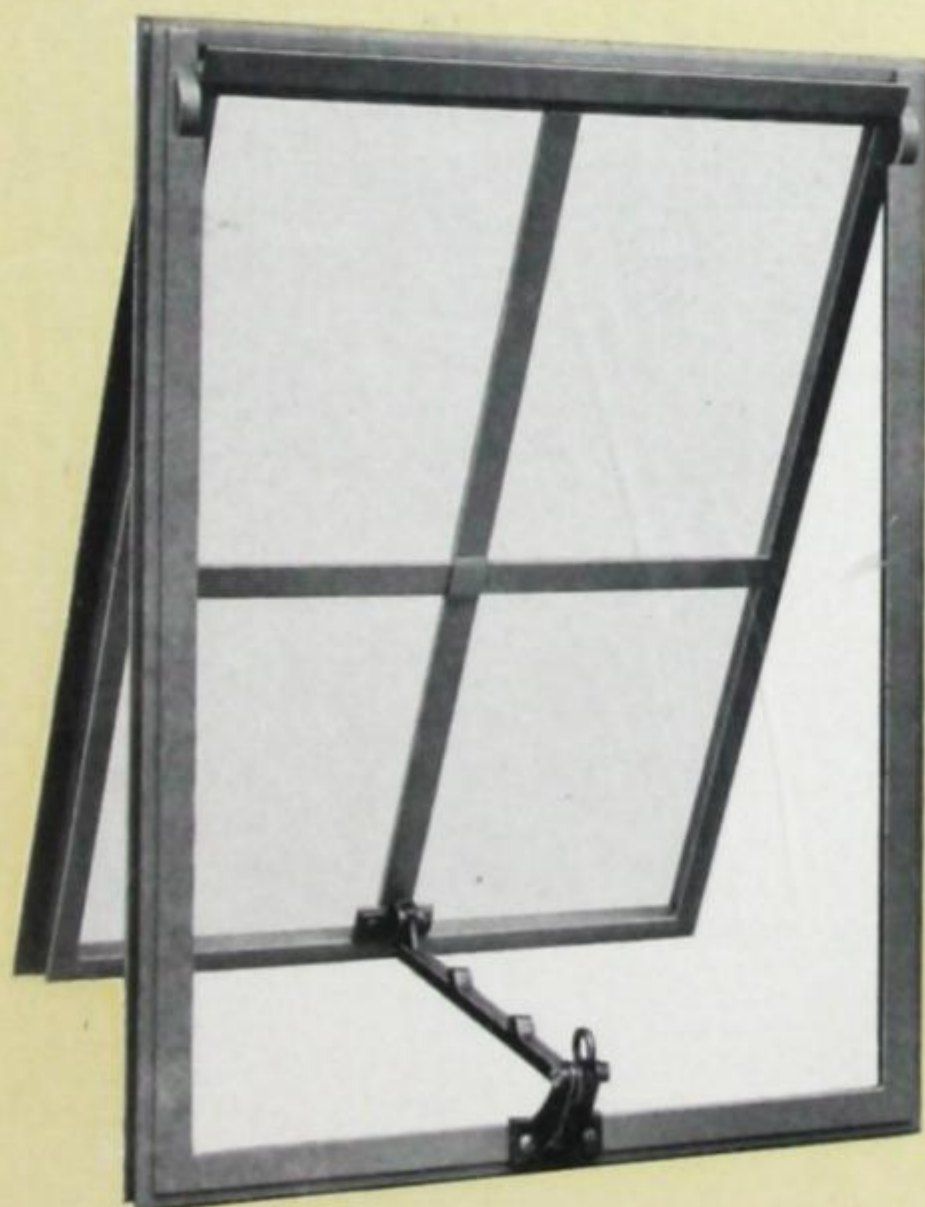
Fitted to all bottom hung casements of Quality 1. Perfectly safe in action, no loose parts. It is only necessary to lift the arms over the keeps to lower the casement for cleaning.



HOPE'S No. 502 OPENER OPERATED WITH CORD

Does not project from inside face of frame more than $2\frac{1}{8}$ inches in any position. Maximum opening, $6\frac{1}{2}$ inches. .

This opener is not suitable for casements more than 18" wide.

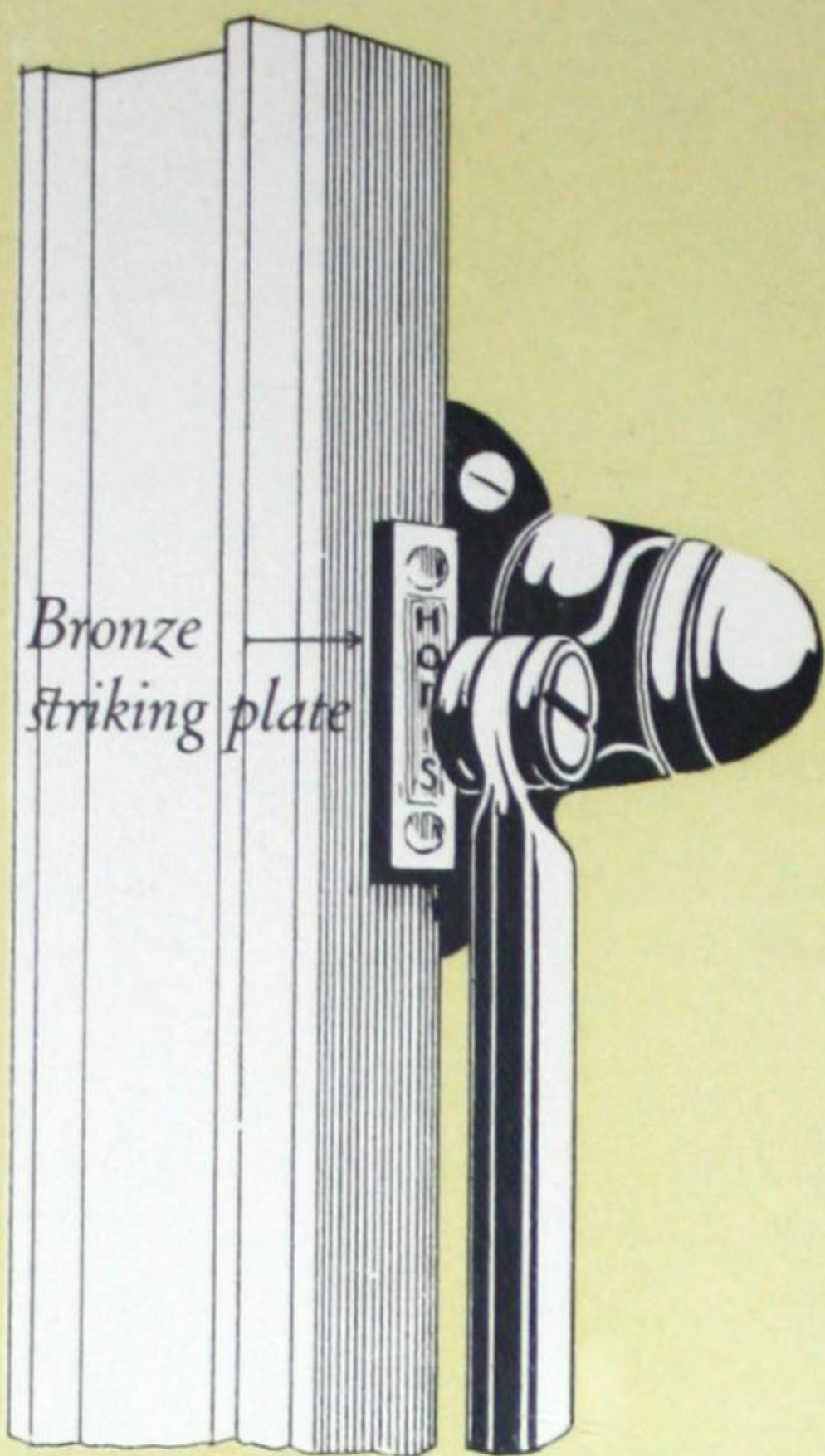


HOPE'S PATENT CAM OPENER 506

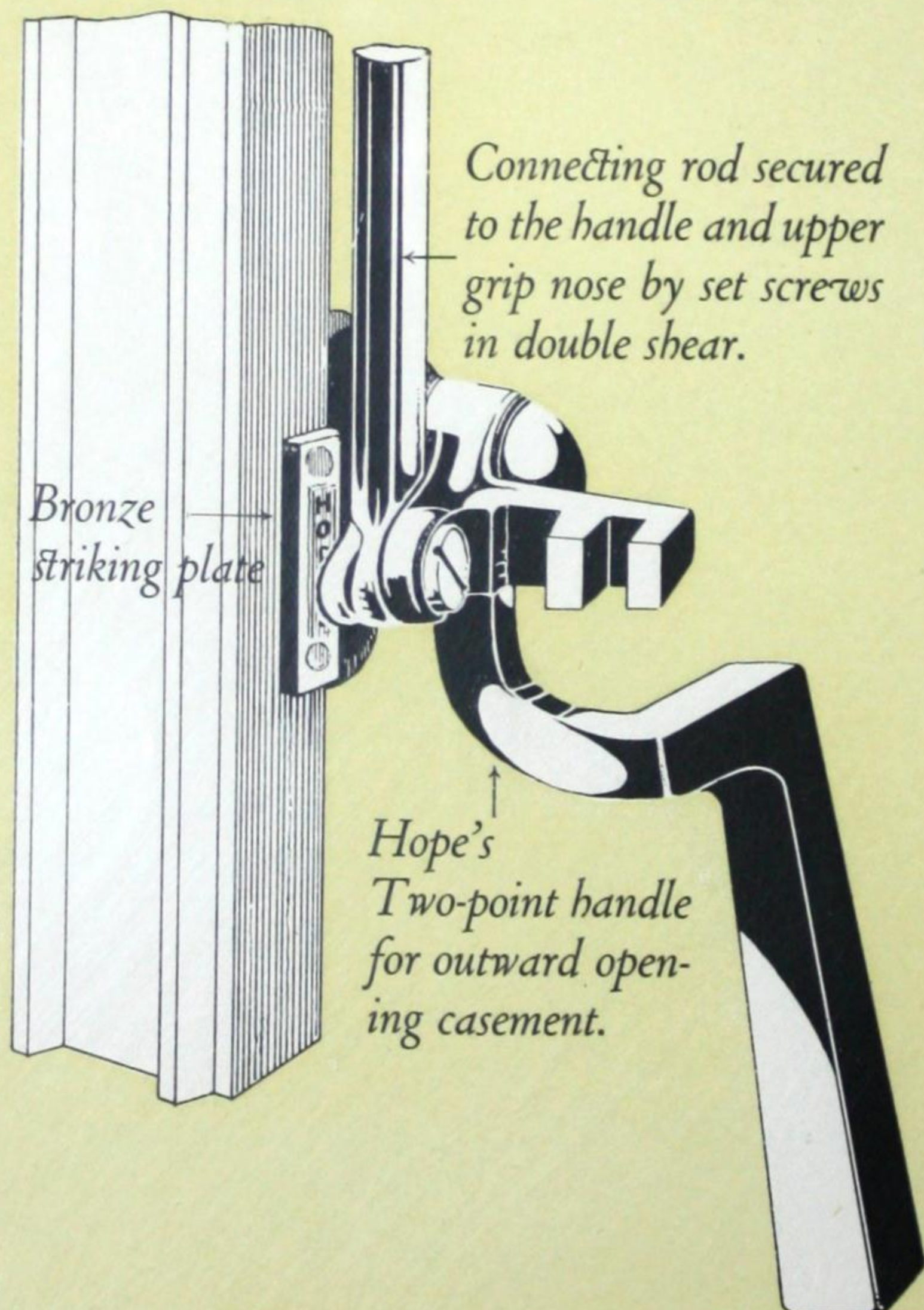
Operated by hand or window stick. Made in 4 sizes, ranging from 6 ins. maximum opening to 12 ins., each with intermediate notches about 3 inches apart. Projection from inside face of frame when closed, $1\frac{3}{4}$ ins.

We recommend this fitting for all top hung casements. It is simple in action, and holds the casement securely when closed.

Double & Treble Grip Bolts

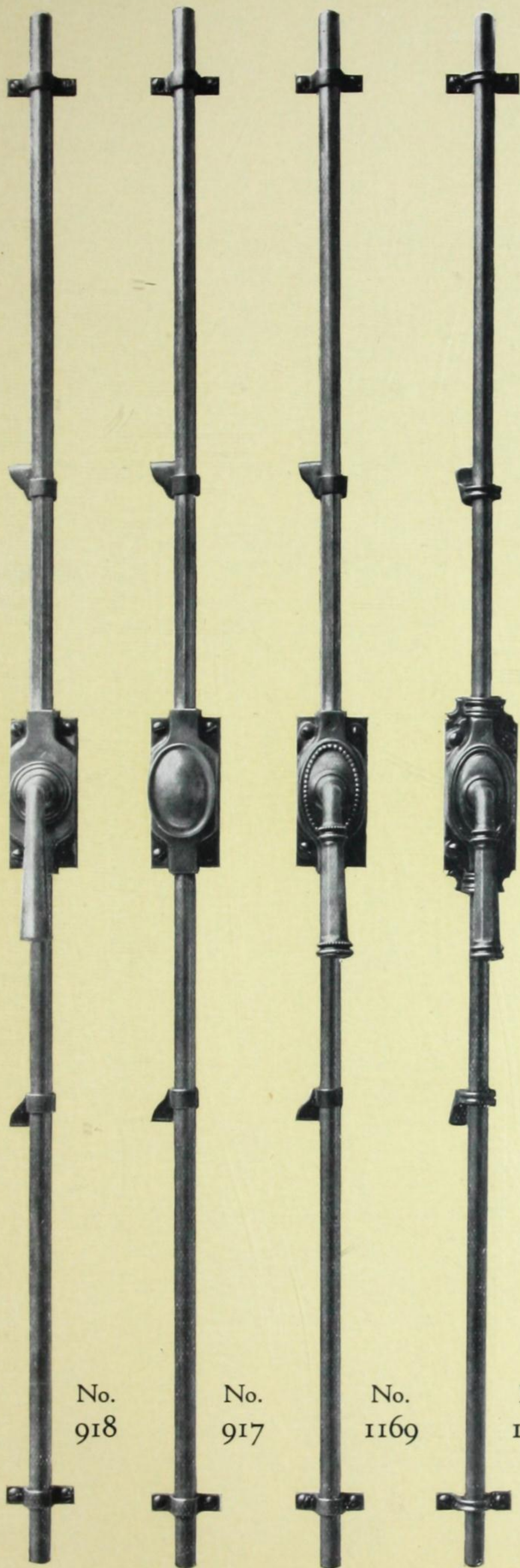


This illustration shews the sound construction of our Double Grip Bolts, which are supplied to all casements over 5 feet high. The handle is usually placed about 15 inches above the cill. Treble Grip Bolts of the same design, with the handle placed in the centre, are supplied for tall casements which have their cills near the ground level.





Cremorne Bolts



Any of these bolts may be selected for French Casements opening inwards (without mullion) over 5 feet high. .

They have stout round rods of extruded bronze, with case, handle and guides of fine cast bronze, polished and finished to a nut brown tone. . . .

The handles may be below the centre if necessary to place them within reach. . . .

A modified form of Cremorne bolt is supplied for casements opening outwards, without mullion.

No.
918

No.
917

No.
1169

No.
1170

HOPE Austral Windows have been installed in the following buildings:

- EAST SUFFOLK & IPSWICH HOSPITAL
H. Munro Cautley, Architect
- STOWE SCHOOL. *Clough William Ellis, Architect*
- INWOOD COTTAGE HOSPITAL. *B. D. Cancellor, Architect*
- BURGH HOSPITAL, MOTHERWELL.
W. Ross, Joint Burgh Surveyor
- CATHOLIC COLLEGE, PRESTON
Mangan & Mangan, Architects
- JOHN BARKER & CO.'s NEW BUILDINGS, KENSINGTON (Crown Property Contract). *H. L. Cabuche, Architect*
Sir Reginald Blomfield, Consulting Architect
- COTTAGE HOSPITAL, DOVERCOURT, ESSEX
F. G. Vincent Brown, Architect
- THE TIMES BOOK CLUB, LONDON. *J. S. Naylor, Architect*
- WESTMINSTER SCHOOL. *W. M. Epps, Architect*
- SENR. SANCHEY ARCAS HOSPITAL. *Sanchez Arcas, Archt.*
- NEW CENTRAL SCHOOL, BARNSELY
Dyson, Cawthorne & Coles, Architects
- SEYMOUR MEAD & CO.'s NEW PREMISES, BOLTON
Trevor Williams, Architect
- HOLLY LODGE HIGH SCHOOL, SMETHWICK
Geo. Randle, Architect
- KING'S ARMS HOTEL, LINCOLN. *W. G. Watkins, Architect*
- CRYSTAL HOTEL, HULL. *Wheatley & Holdsworth, Architects*
- SECONDARY SCHOOL, WESTCLIFFE-ON-SEA
H. H. Thompson & Co., Architects
- STUART MEMORIAL HALL, NORWICH
Edward Boardman & Son, Architects
- CLIFF TOWN CHURCH. *Douglas Smith & Barlay, Architects*
- DOMINICAN CONVENT, DUBLIN. *R. M. Butler, Architect*
- NEW OFFICES FOR LEICESTER MAIL
Stockdale, Harrison & Sons, Architects
- H. L. DRIVER LTD. EXTENSIONS, LEICESTER
Stockdale, Harrison & Sons, Architects
- ISOLATION HOSPITAL, RUNCORN. *J. Wilding, Architect*
- KINGSHOLM SCHOOLS, GLOUCESTER
Walter B. Wood, Architect
- ANDOVER WAR MEMORIAL. *Edward Maufe, Architect*
- EDINBURGH ROYAL INFIRMARY: Radiological Dept.
Thomas W. Turnbull, Master of Works
- TILBURY HOSPITAL. *Colcutt & Hamp, Architects*
- WESTMORLAND COUNTY HOSPITAL, KENDAL
Curwen & Sons, Architects
- "THE HILL" (For the late Viscount Leverhulme)
Leslie Mansfield, Architect
- HOSPITAL OF ST. JOHN & ST. ELIZABETH
ST. JOHN'S WOOD, N.W. *Henry W. Binns, Architect*



HOPE'S AUSTRAL WINDOW

British Patent No. 29058, 16th December, 1913

HOPE'S *Austral Window* *Specification*

WINDOWS to be HOPE'S AUSTRAL one-plane type supplied and set in place by the manufacturers

HENRY HOPE & SONS LTD., SMETHWICK, BIRMINGHAM, to the following specification:

Frames & Sashes of solid rolled open hearth steel of ample weight and strength for the sizes required and of the shapes shewn upon the detail drawings. All four corners of the frame and of each of the Sashes to be welded and neatly cleaned off. Sashes to be carefully fitted to the frame so as to provide weathertight contact when closed and to work smoothly and silently when being operated.

Hardware. All Hardware is to be provided by the Manufacturers, and shall consist of Austral Balance Arms of drop forged open hearth steel pivotted in the frame by solid forged pivots rotating in bronze bushings and attached to the sashes by bronze pins. All bearings to be of ample diameter and length.

Bronze Guide Rollers at top and bottom to be of correct shape to work smoothly in the machined channel: the lower rollers on thrust bolts to allow of lower sash swinging in for cleaning.

Bronze automatic catch and plate at meeting rail, and one pair of bronze handles to the lower sash.

If blinds are required, upper and lower sashes must each be fitted with a pair of steel blind brackets and combined blind cord rollers and cleats.

Finish. One coat of grey paint and one coat of elastic grey enamel, both coats stoved on.

Beads for Glass (recommended for single sheets of plate glass) to be of rolled steel, fixed with brass raised head screws.

Astragal Bars, when required, should be specially described and specified and shewn on the drawings.

Setting. The Manufacturers will provide all the labour and the material for setting in place, but the general building contractor shall provide all necessary scaffolding and hoisting tackle.

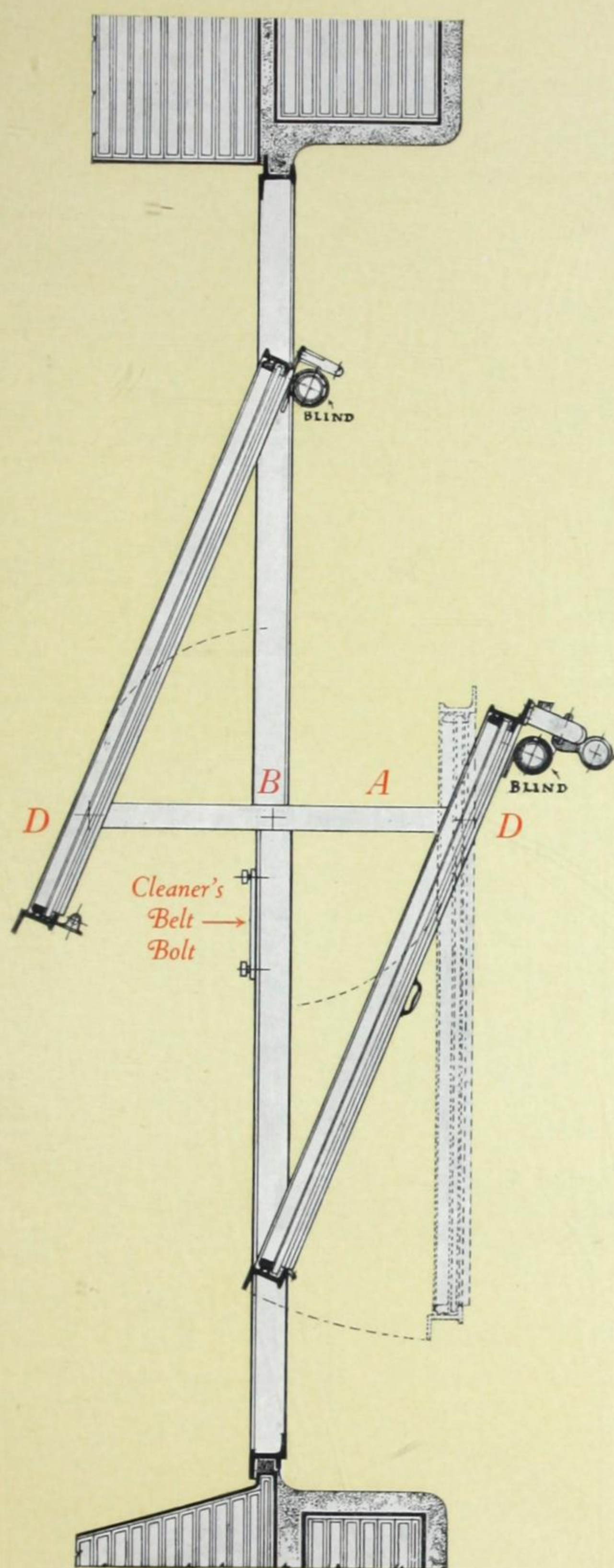
Cleaner's Hooks. When it is desired to clean both upper and lower sashes from inside, specify one pair of bronze cleaner's hooks rivetted to the steel frame. (Cleaner's safety belts will be supplied on application).



Construction



British Patent No. 29058, 16th December, 1913



SECTION *showing* SASHES
FULLY OPENED

THE HOPE AUSTRAL WINDOW differs from all double hung sliding Windows by having its upper and lower sashes balanced on arms without weights, pulleys, cords or springs.

The Balance Arm "A" is a steel drop forging pivotted in the frame in a bronze pivot block "B," and attached to the upper and lower sashes by bronze pins "D." . .

The Arm is free to revolve through a quarter circle, and the sashes balance each other in any position.

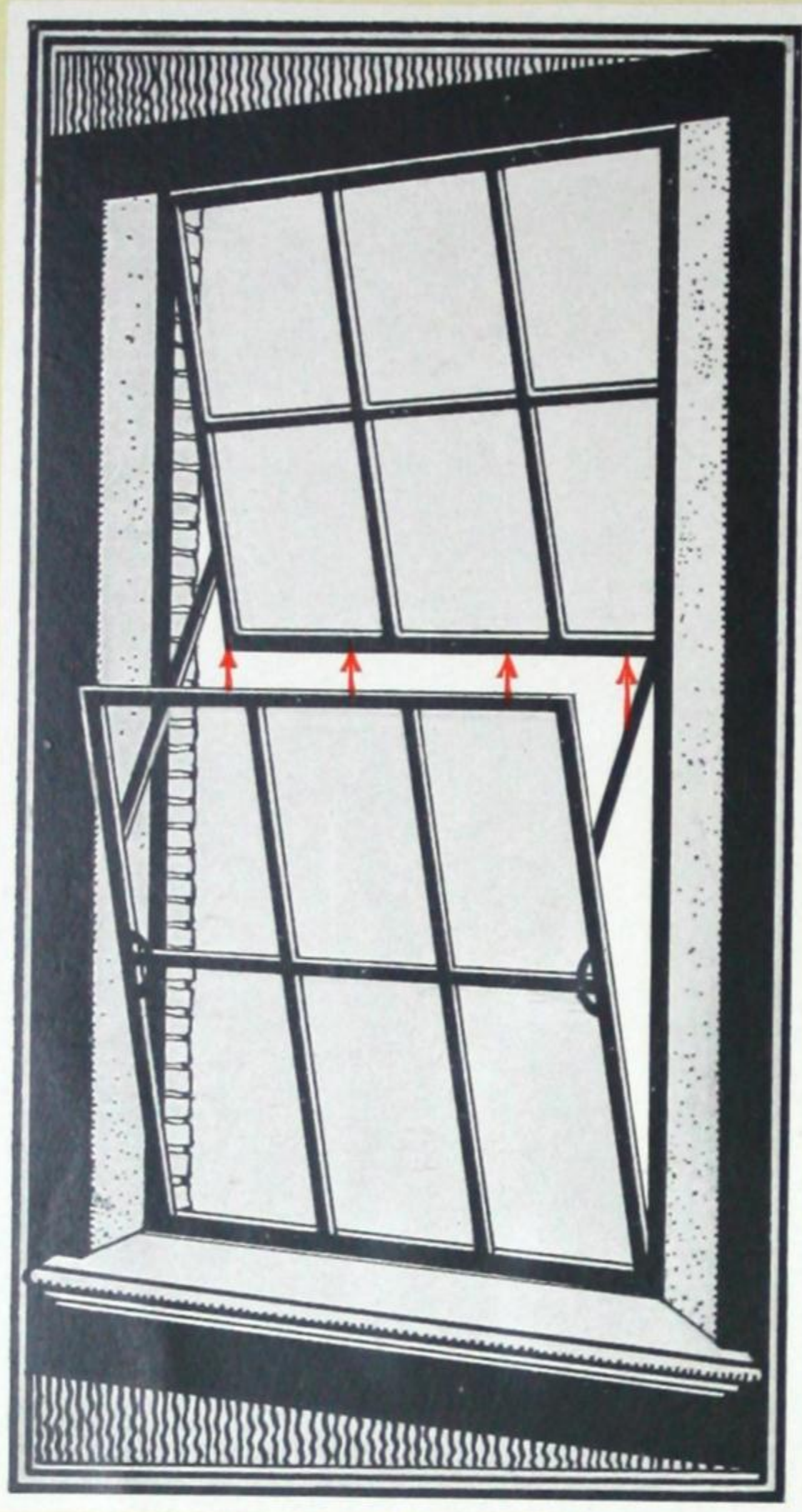
The top of the upper sash and the bottom of the lower sash are provided with bronze rollers at the outer corners, which engage in the machined grooves of the fixed steel frame.

To open the sashes it is only necessary to release the sash fastener at the meeting rail and gently lift the lower sash, when the meeting rails of the two balanced sashes swing apart without effort and "stay-put" in any desired position.

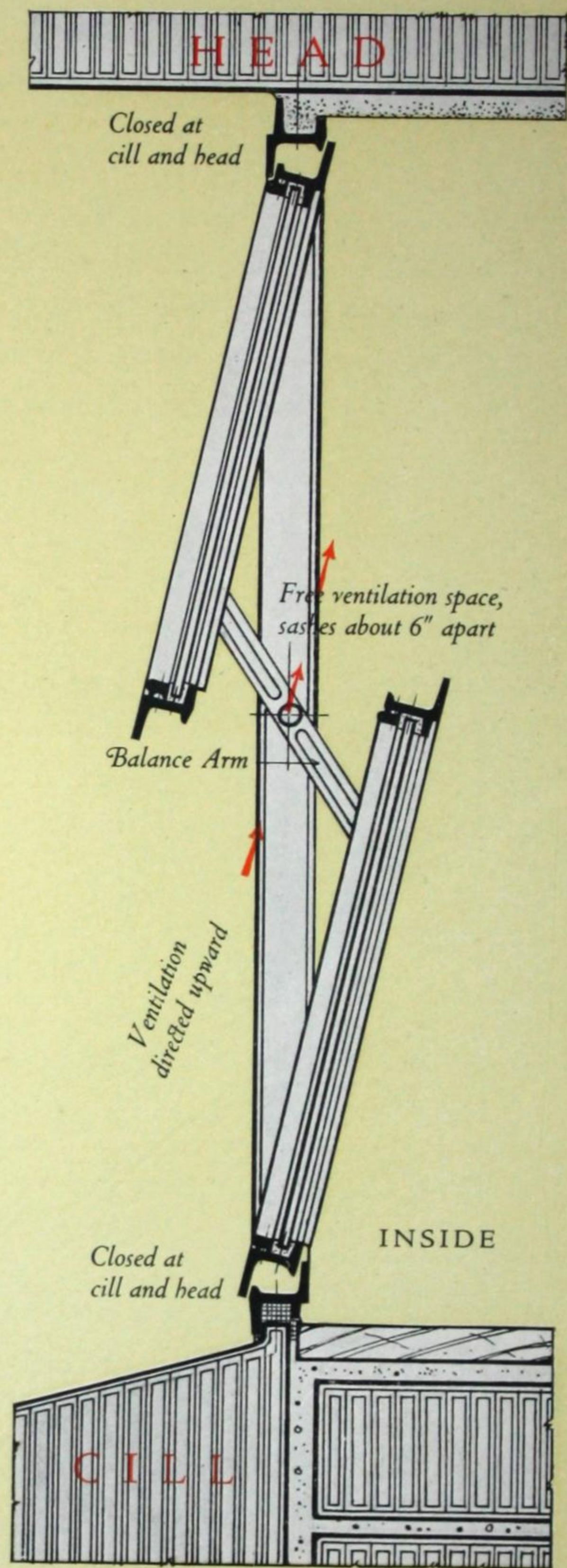
The Steel Frames are set direct into the masonry or brickwork (see details on pages 42 and 43), giving a clean interior and exterior finish, and leaving no hollow spaces to afford lodgment for dirt and germs.

HOPE'S *Austral Window*

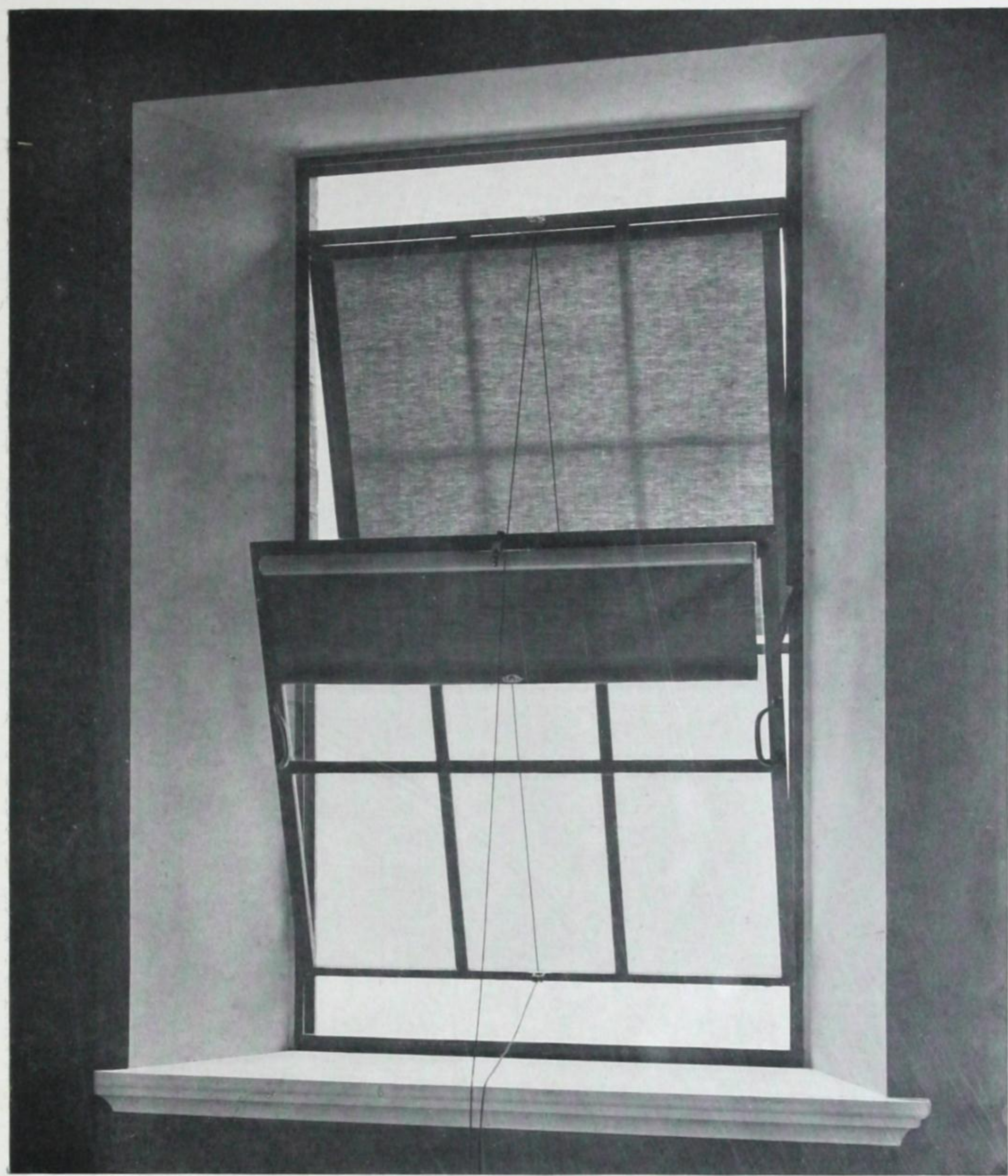
Ventilation without Draught



NEGLECT TO OPEN WINDOWS IN SCHOOLS AND SIMILAR BUILDINGS IS OFTEN DUE TO DIFFICULTY IN OPERATING WOOD SLIDING SASHES, AS WELL AS TO A NATURAL OBJECTION TO DRAUGHTS. THIS DRAWING SHEWS HOW THESE OBJECTIONS ARE OVERCOME IN THE HOPE AUSTRAL WINDOW. THE ACTION OF THE BALANCE ARMS PROVIDES AN OPENING BETWEEN THE TWO SASHES OF ABOUT 5 OR 6 INCHES AT THE MEETING RAIL WITHOUT OPENING AT TOP OR BOTTOM. THIS PERMITS FRESH AIR TO ENTER AT AN ANGLE DIRECTED UPWARDS TOWARDS THE CENTRE OF THE ROOM, AND MAINTAINS A CONSTANT CIRCULATION OF FRESH AIR WITHOUT COLD DRAUGHTS. WHEN FULLY OPENED THIS WINDOW GIVES 70% VENTILATION COMPARED WITH 50% OBTAINED WITH WOOD SLIDING SASH.

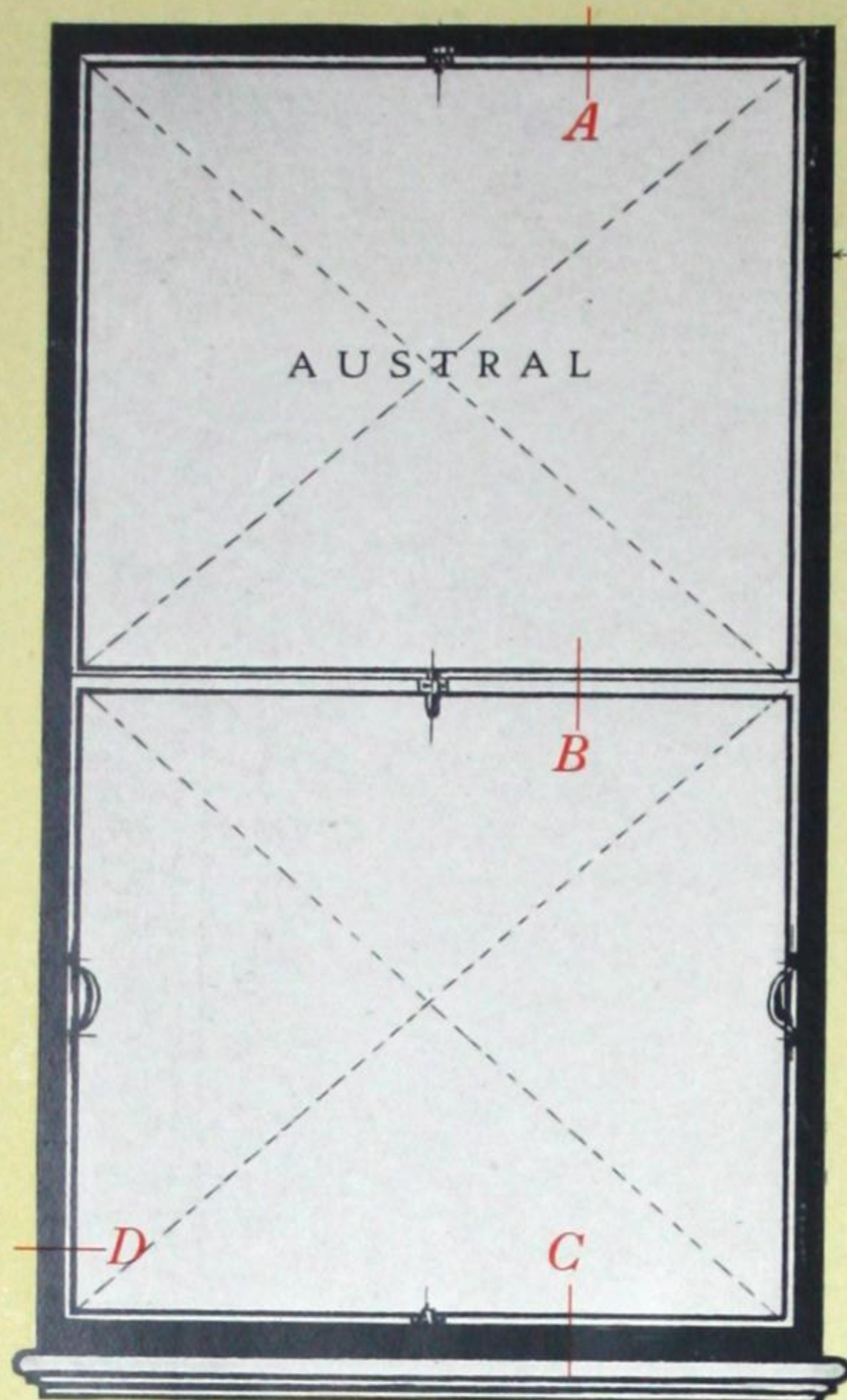


Application of Blinds *Ventilation with Light Control*

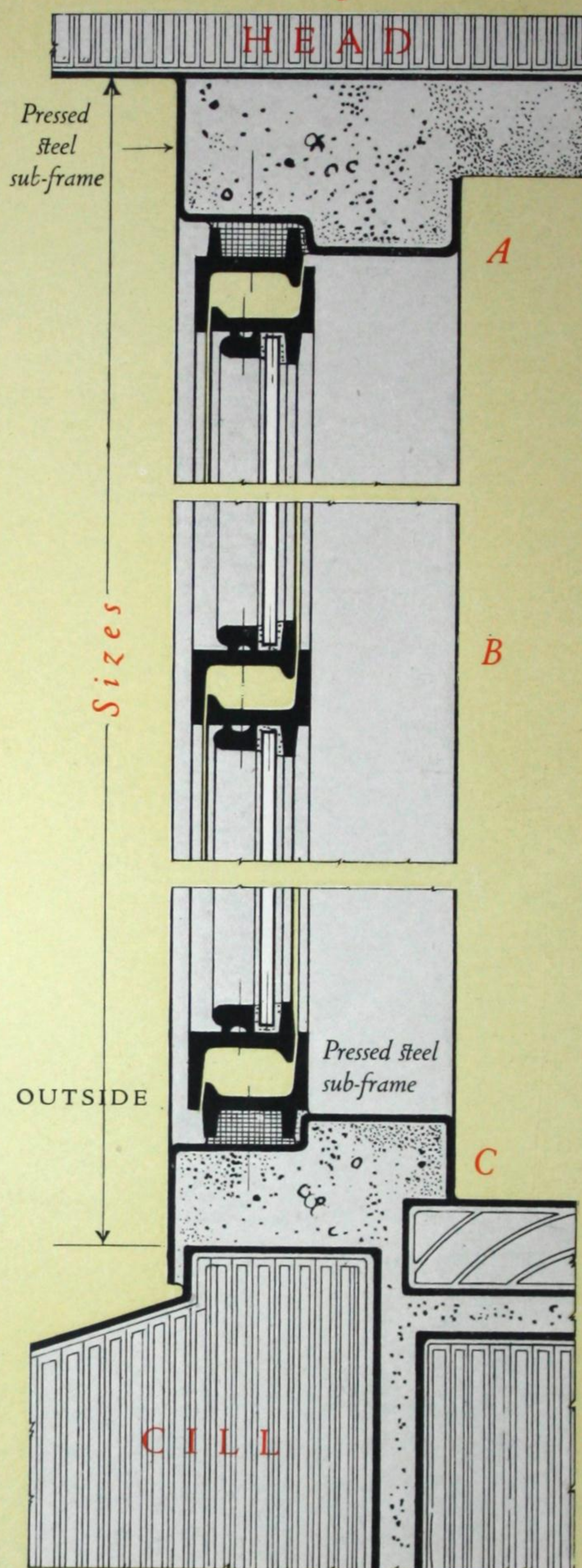
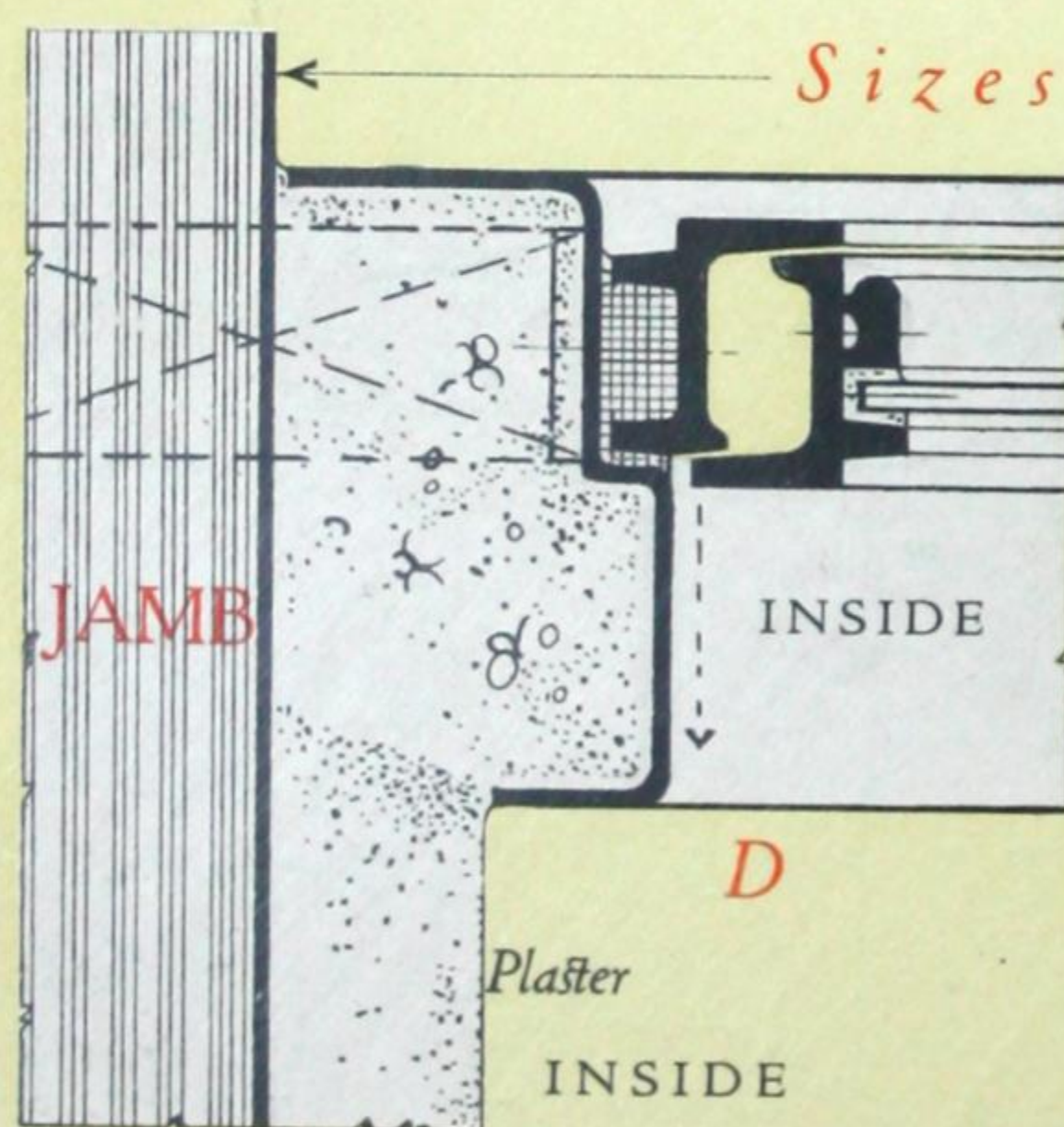


The method of applying blinds is an important feature for Southern aspects. They are hung on brackets fixed to the top rails of the upper and lower sashes, and provide separate light control for each sash. Both the blinds being close to glass and always in tension, do not flap in the wind with the sashes open. This is very important where quietness is essential. Ordinary roller blinds or curtains can be applied without difficulty, and the windows can be opened to the full depth of reveals when blinds are drawn.

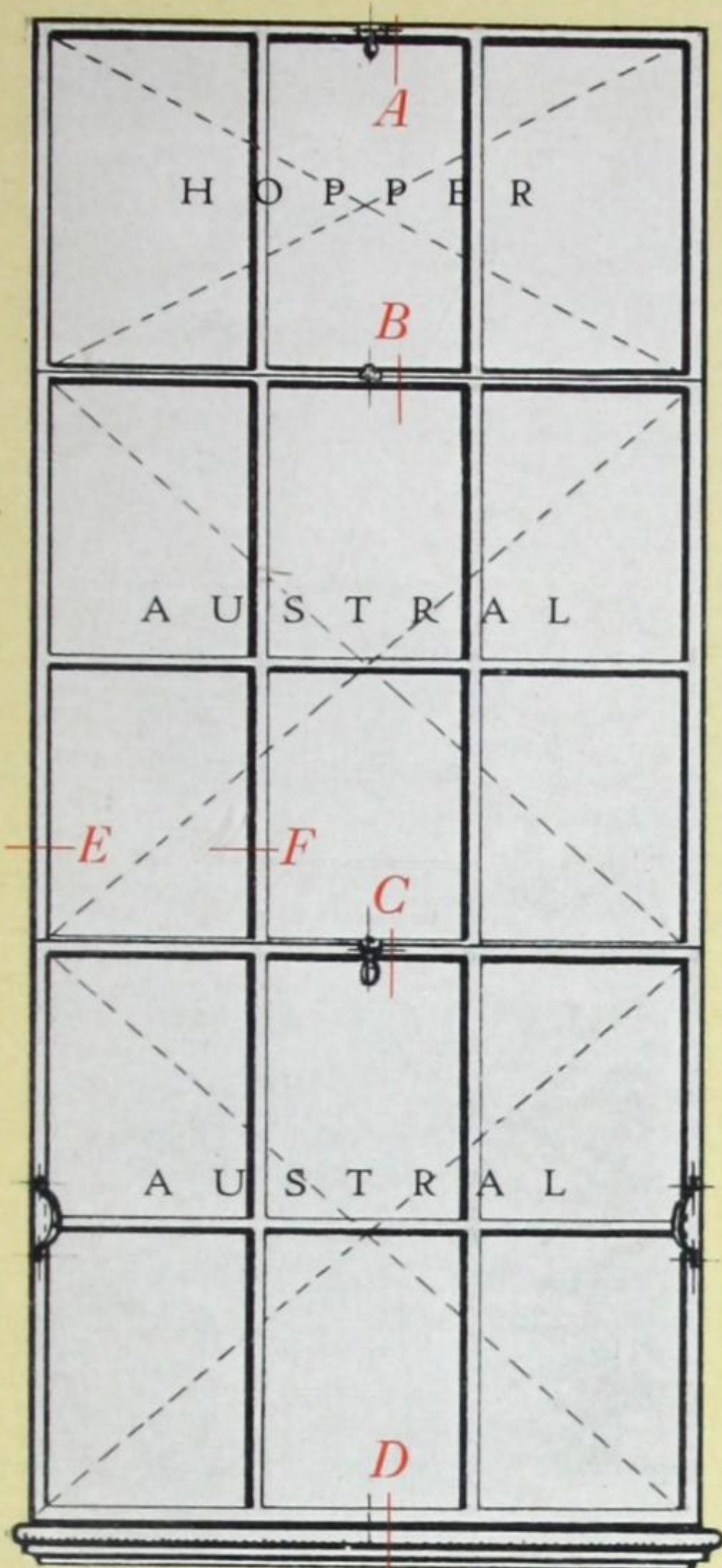
Pressed Steel Sub-frame



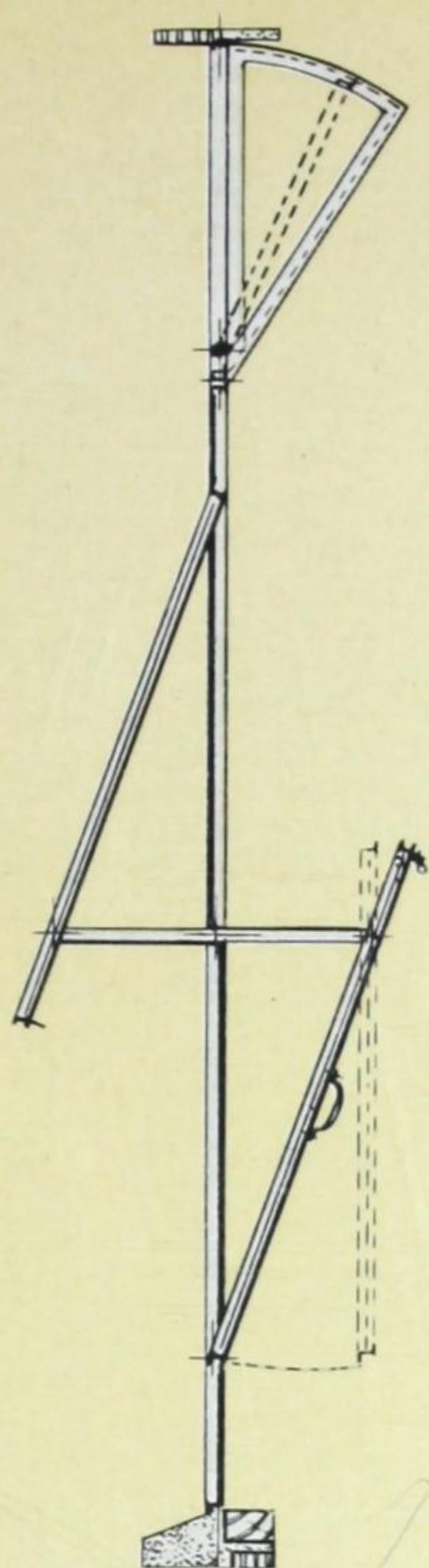
WHERE IT IS DESIRED FOR ARCHITECTURAL EFFECT TO INCREASE THE WIDTH AT HEAD, JAMBS AND CILL, HOPE'S AUSTRAL WINDOW SET IN A STEEL SUB-FRAME GIVES AN OVERALL OUTSIDE DEPTH OF $3\frac{1}{2}$ INCHES, AS SHEWN ON HALF FULL SIZE DETAILS.



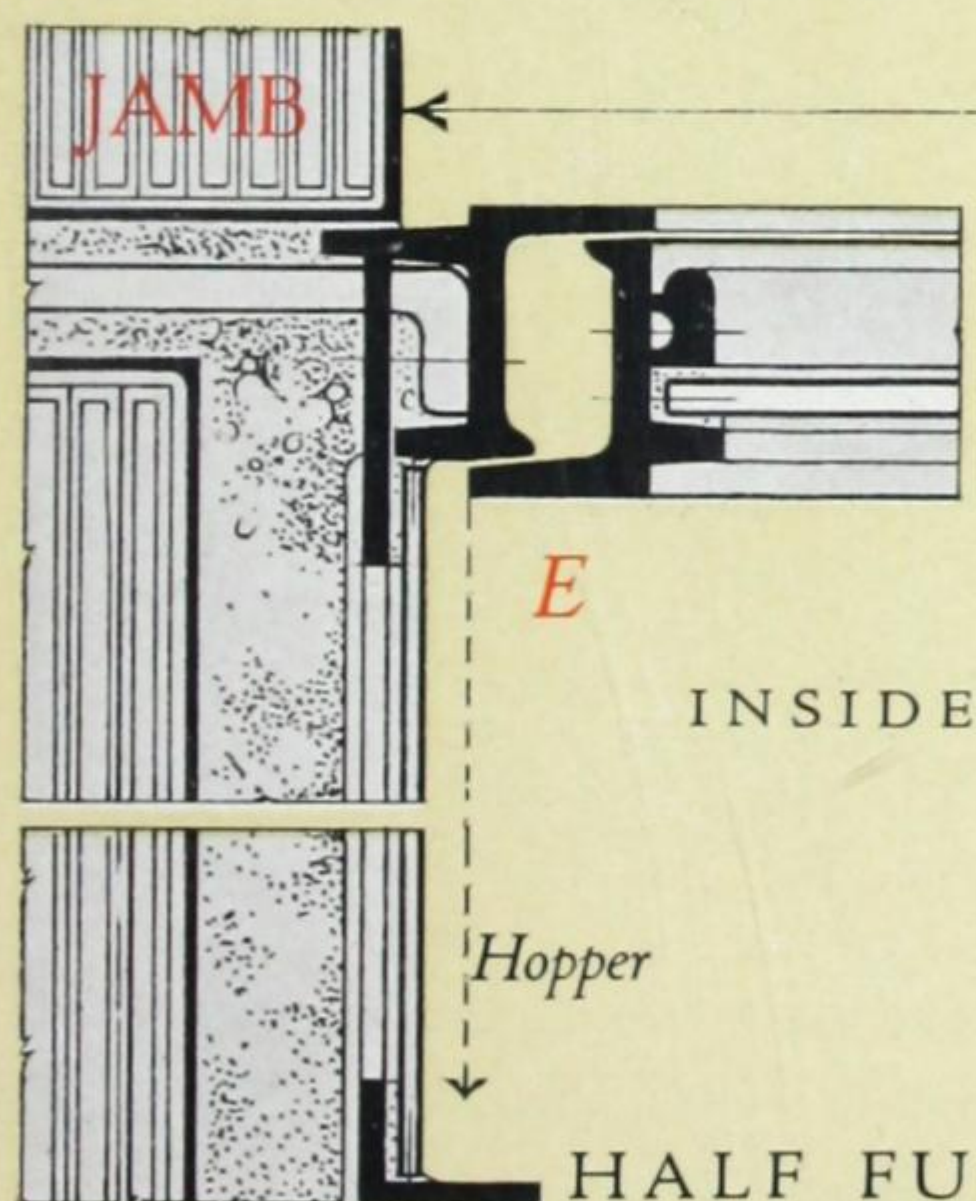
Combination with Hopper



THIS COMBINATION IS SPECIALLY SUITED TO HOSPITAL WARDS, SCHOOLS, ETC. THE HOPPER MAY BE PLACED AT CILL LEVEL WHERE THIS IS PREFERRED. THE ASTRAGAL BARS ARE NOT ESSENTIAL AND MAY BE OMITTED.



Section



INSIDE

Hopper

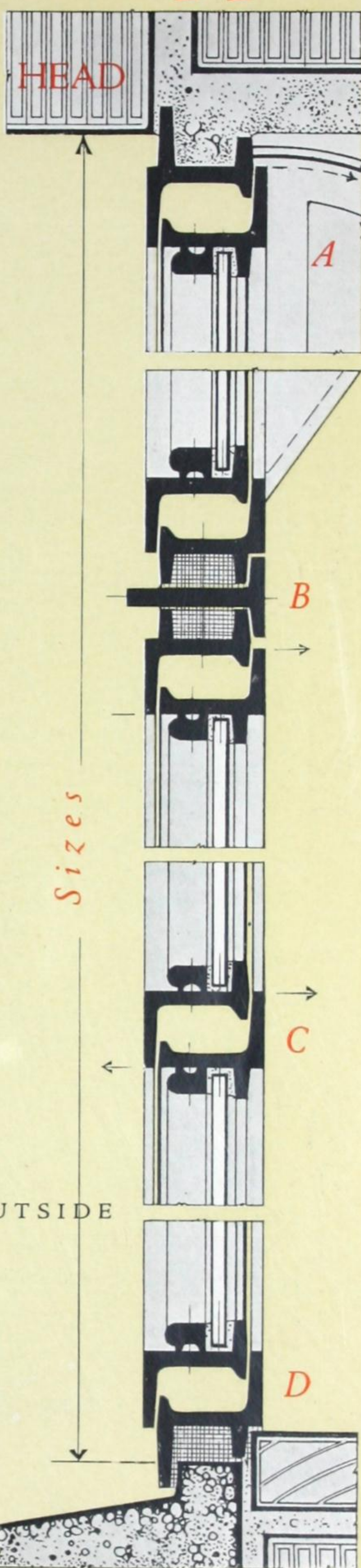
HALF FULL SIZE DETAILS

Sizes



F

OUTSIDE



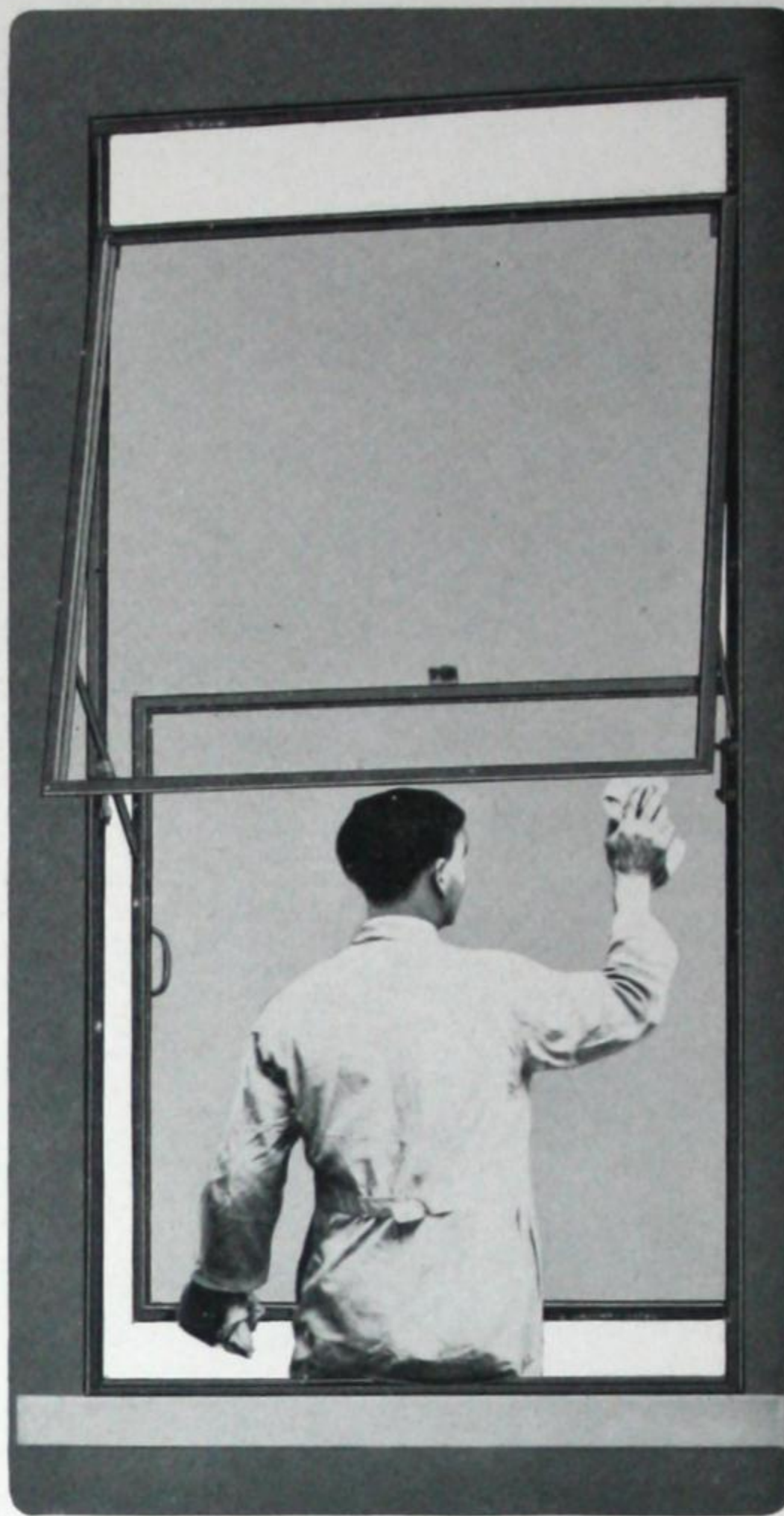
Sizes



Cleaning Method



Cleaning the outside of the Upper Sash



Cleaning the outside of the Lower Sash

These photographs shew the method employed on the highest buildings in the United States for cleaning the Austral window. The lower sash is swung inwards, enabling the cleaner to clean the outside of the glass while standing inside the room. For cleaning the upper sash a safety belt is employed, which is attached to special double bolts, rivetted to the steel frame.

TEST for DURABILITY

151 EDMUND STREET
BIRMINGHAM
25th February, 1925

Dear Sirs,

In accordance with your instructions we have conducted an exhaustive test on one of HOPE'S PATENT AUSTRAL WINDOWS. This, a standard window, glazed with a $1\frac{1}{4}$ " plate glass, was set up in your works and driven mechanically to cause it to open and shut about 960 times per hour. The shutting was purposely arranged to be of considerable violence, in order to test all the working parts under prolonged and rough usage.

The fittings having been sealed under our inspection, the test commenced on the 20th October, 1924, and was continued until January 14th, 1925, when the window had been opened and closed 508,547 times.

We stopped the test at this point, and after careful examination of the window we certify that it is in perfect working order. A very slight wear on the pivot pins and connecting pins being the only evidence of the heavy treatment to which it had been subjected.

It is interesting to observe that the test was equal to the violent opening and closing of the window six times daily for 232 years.

Yours faithfully,

HENRY LEA & SONS

(M. Inst. C.E., M. Inst. Mech. E., M. Inst. Ele&T. E.)

Sashes of unequal Sizes



Window openings cannot always be conveniently divided into two equal parts, and where this occurs Hope's Patent Austral Window can be applied as shewn in the illustration. It also shews the use of fixed marginal panes to make a convenient window in a very wide opening.

THE next five pages illustrate weathertight steel doors of the same quality as Hope's casements, made to open outwards or inwards, single or folding, with suitable locks and fittings. Single doors are made up to 8' 0" in height by 3' 0" wide. Double doors are made folding, without mullion, up to 8' 0" high by 5' 0" wide.

Rebates to head and jambs should be inside for doors opening inwards.

In designing doors glazed with plate glass below the lock rail, it is necessary to provide marginal panes to accommodate the lock as shewn on page 48, or horizontal bars as shewn on the opposite page. Glass cannot be cut to fit round a lock without risk of repeated breakage.

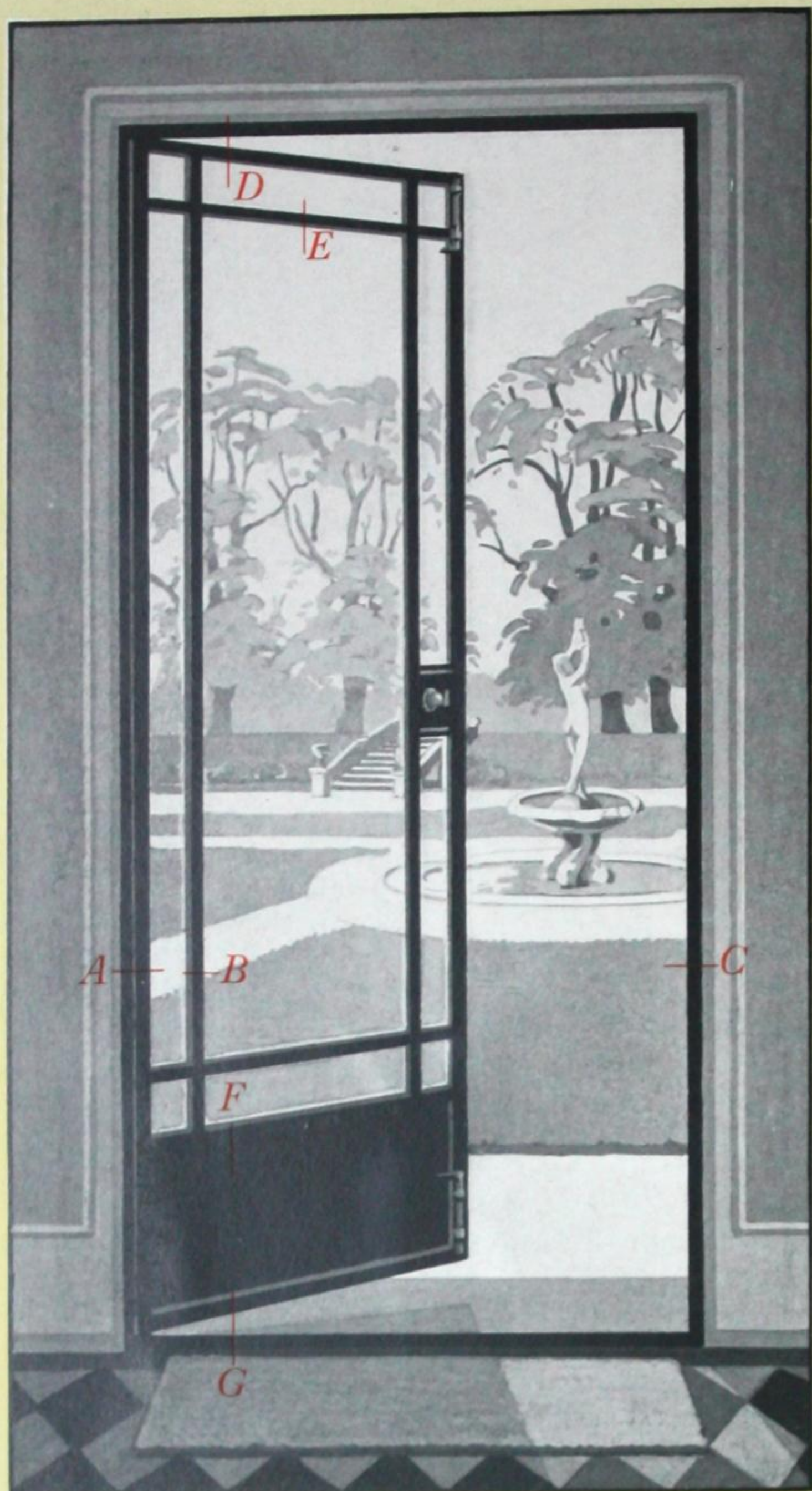
We will gladly supply drawings and estimates for doors in steel or bronze to meet Architects' requirements.

HOPE'S *Casement Doors*



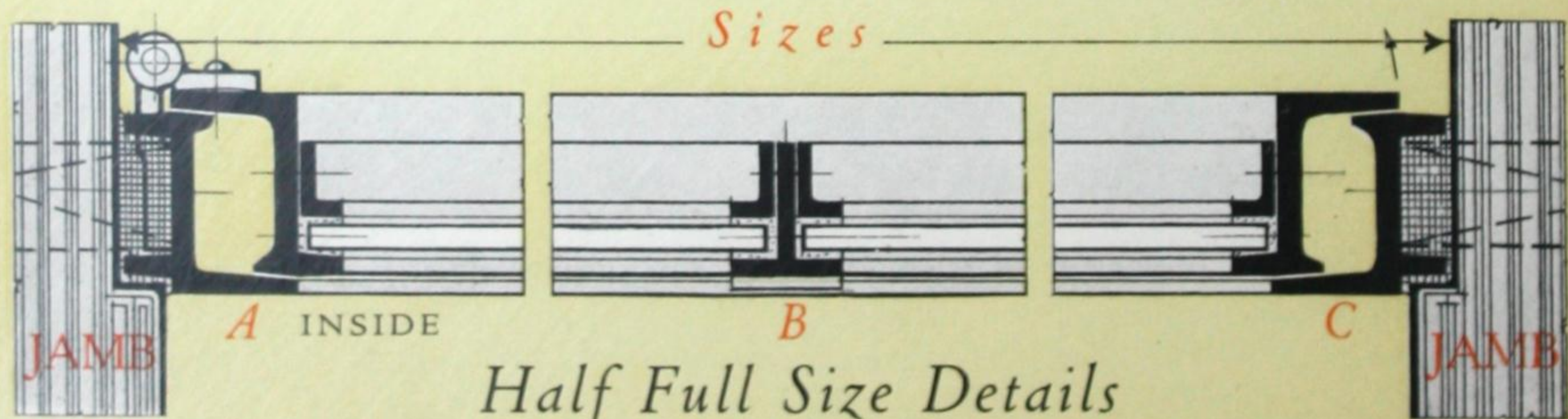
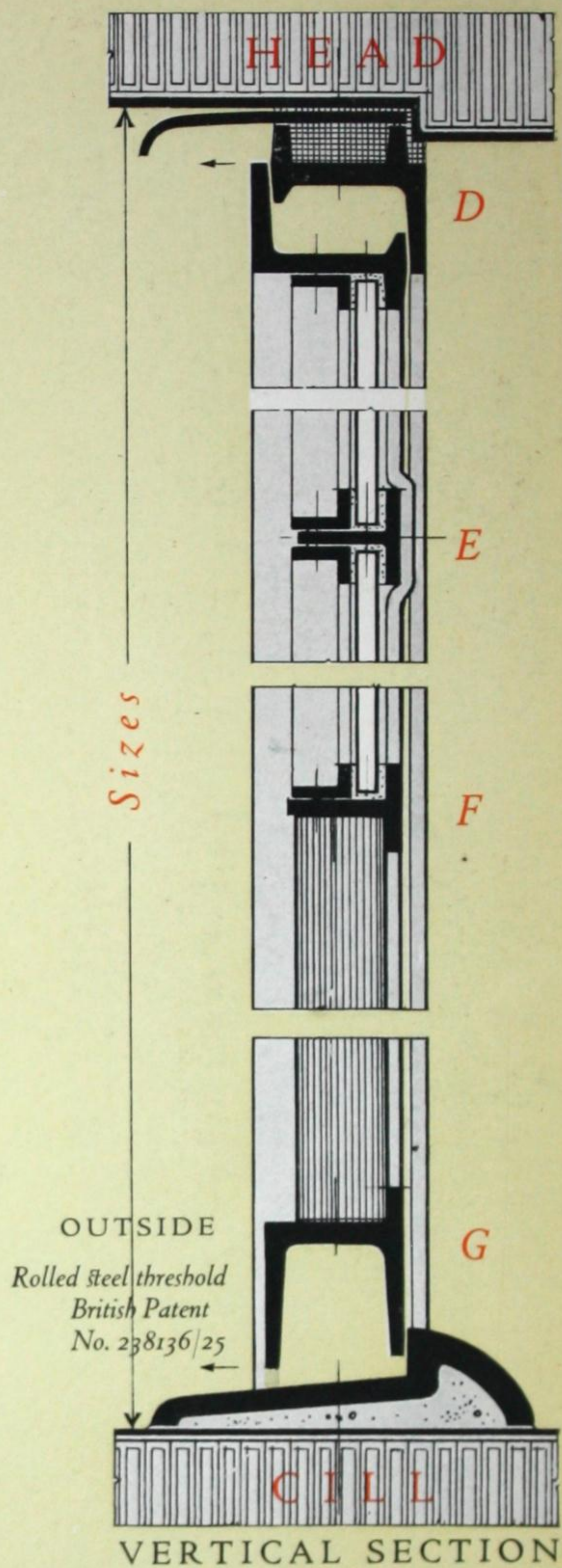
A pair of outward opening doors of Section 21, with steel framed mullions and transome, and fitted with bronze mortice locks to work from both sides. Solid gunmetal bolts at top and bottom are fitted on the left hand door. Where it is desired, additional bolts are fitted on the right hand door also. *Note the bars forming lockrail to obviate breakage of glass.*

HOPE'S *Casement Doors*



Single door, Section 21, opening outwards, fitted with bronze mortice lock to work from both sides, and solid bronze bolts at top and bottom. Note the bars forming lockrail, to obviate breakage of glass.

The details below shew door fitted into $\frac{3}{8}$ " rebates. They can be fixed to flush jambs as shewn on opposite page. Dimensions should be given to points indicated by arrows.



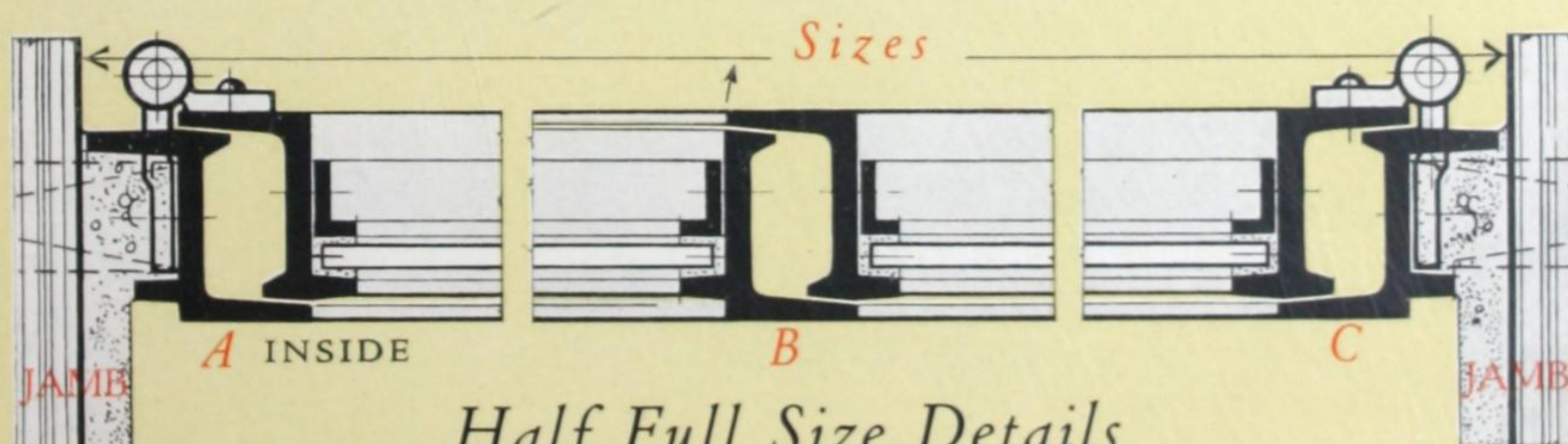
Half Full Size Details

to open outwards or inwards



This illustration shews a pair of doors of Section 21, to open outwards, of the same construction as the single door on the opposite page, but provided with Cremorne bolt in solid bronze. Bolts of solid bronze are fitted on the left hand door, so that this can be left closed and the right hand door operated for ordinary use.

The details below shew doors fixed to flush jambs with internal plaster finish, they can be fitted into $\frac{3}{8}$ " rebates as shewn on opposite page. Dimensions should be given to points indicated by arrows.

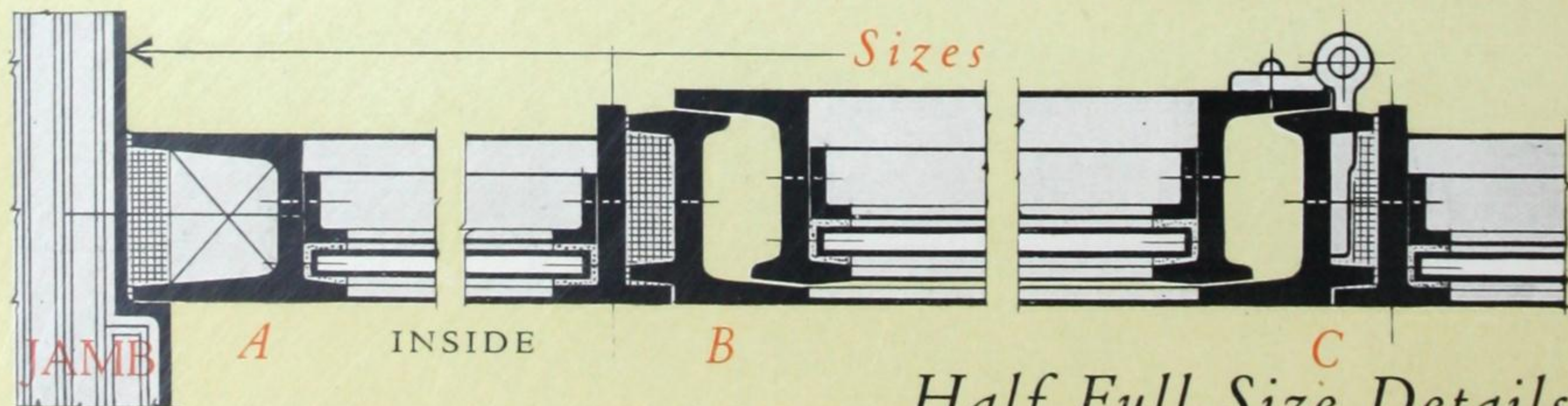
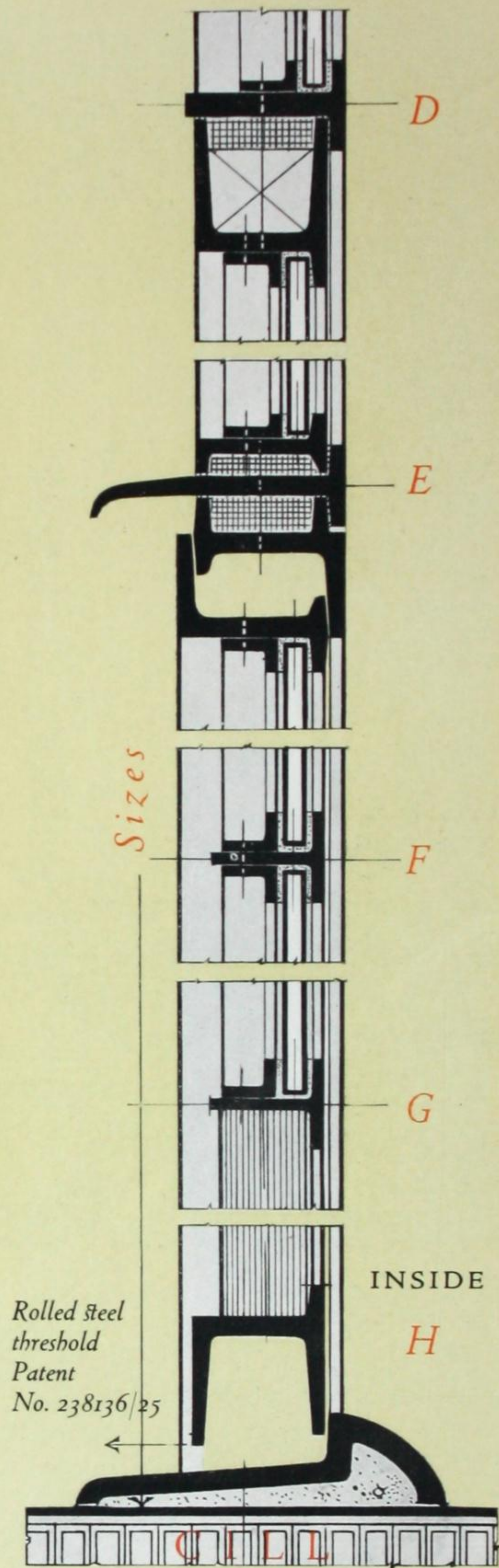


Half Full Size Details

HOPE'S *Casement Doors*



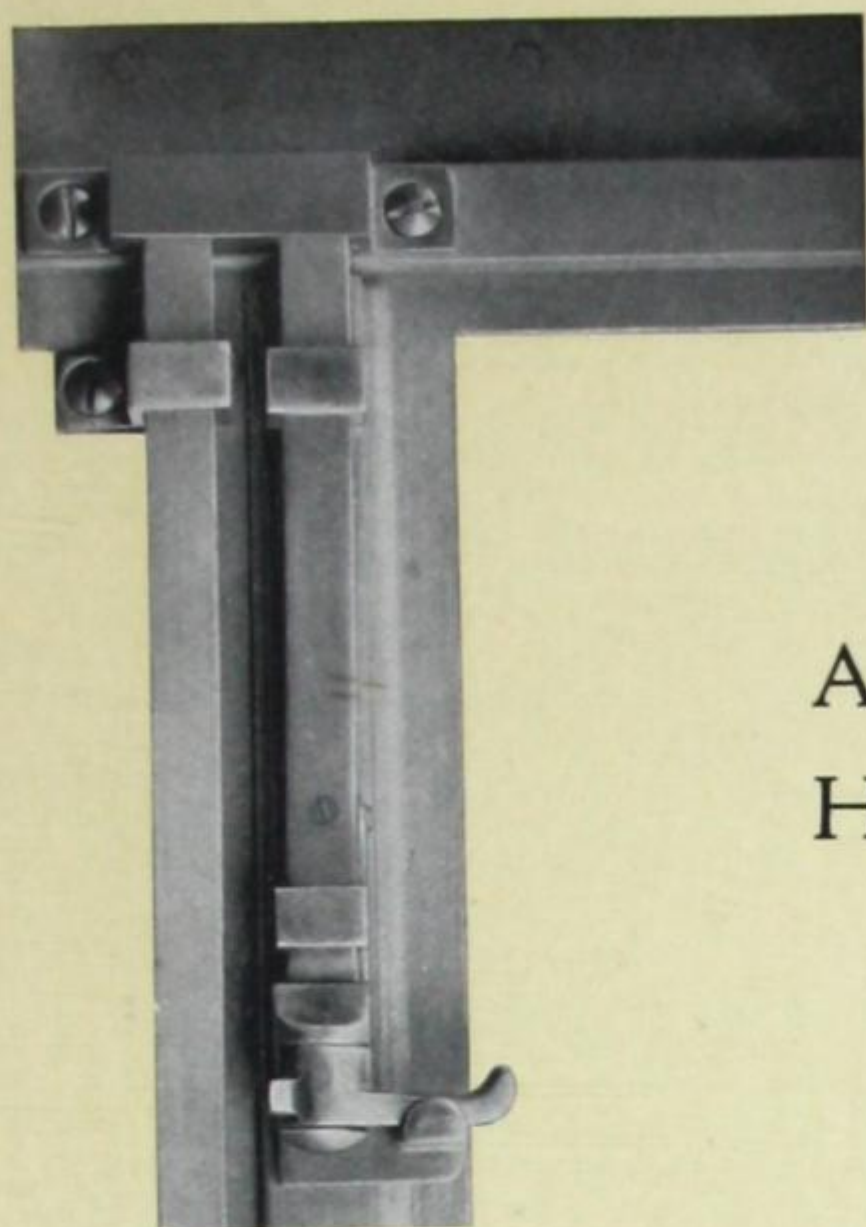
Single door, Section 21, opening outwards, with steel framed mullions and transome, fitted with solid bronze latch, with handles to operate from either side, and with small knob to lock from the inside only. The bolts top and bottom are of solid bronze. Locks, with keys to lock on either side, can be supplied when required instead of the pattern illustrated above.
Dimensions should be given to points indicated by arrows.



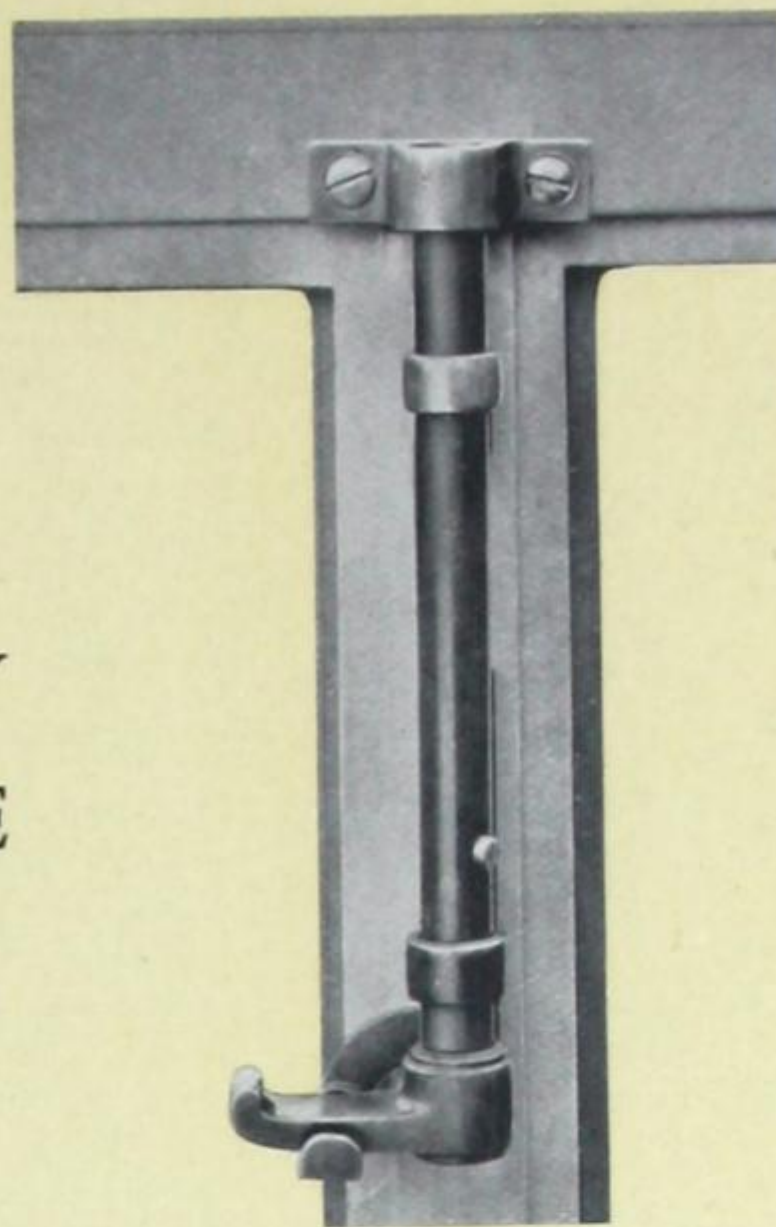
Half Full Size Details



Door Furniture

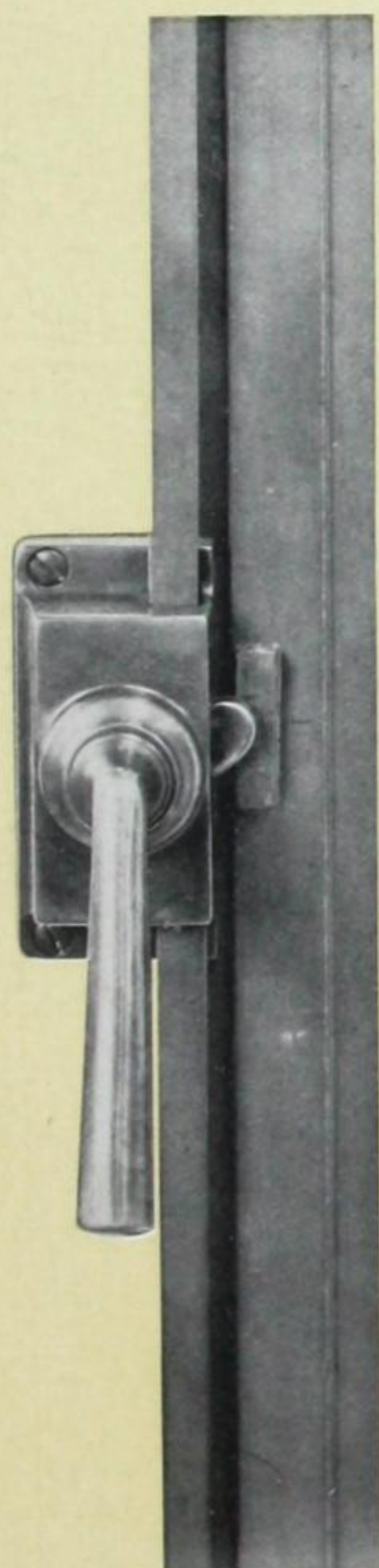


SOLID GUNMETAL BOLT
No. 1716, FOR USE WITH
CREMORNE BOLT AS
SHEWN ON PAGE 49.

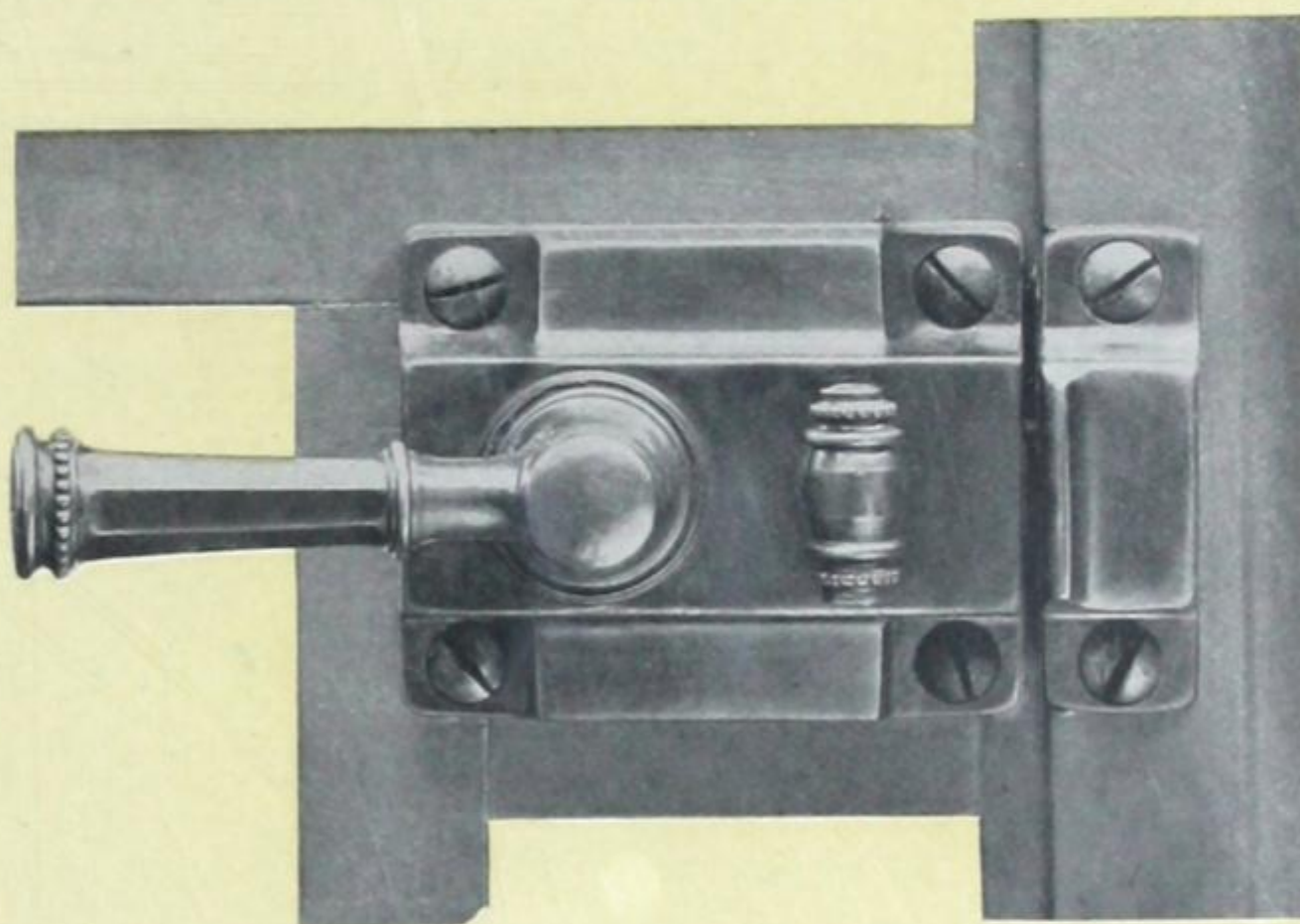


SOLID GUNMETAL BOLTS
No. 1392, AS SHEWN ON
PAGES 48 AND 50. . . .

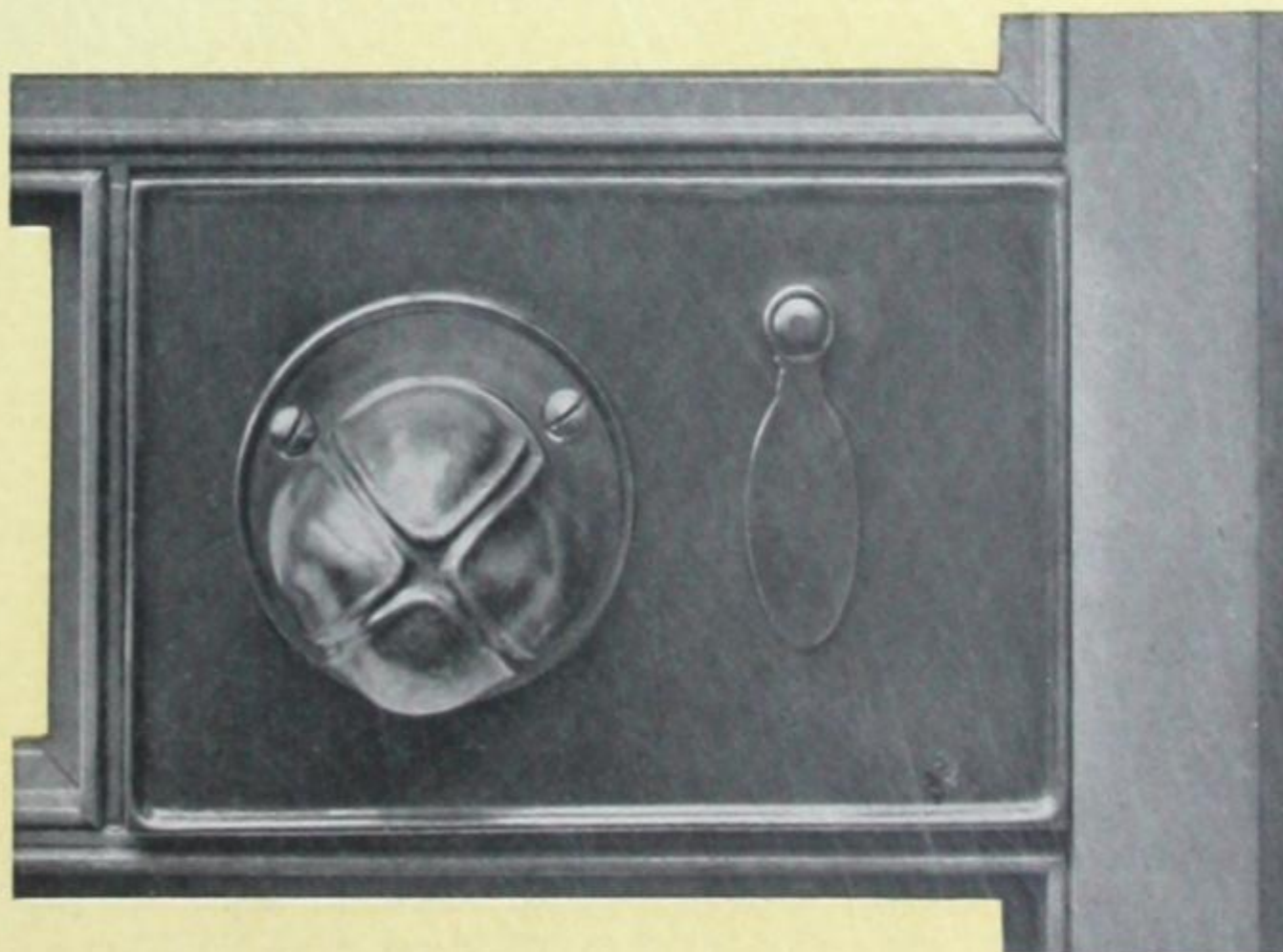
DETAILS *are*
APPROXIMATELY
HALF FULL SIZE



CREMORNE BOLT No. 1715
IN SOLID GUNMETAL,
AS SHEWN ON PAGE 49.



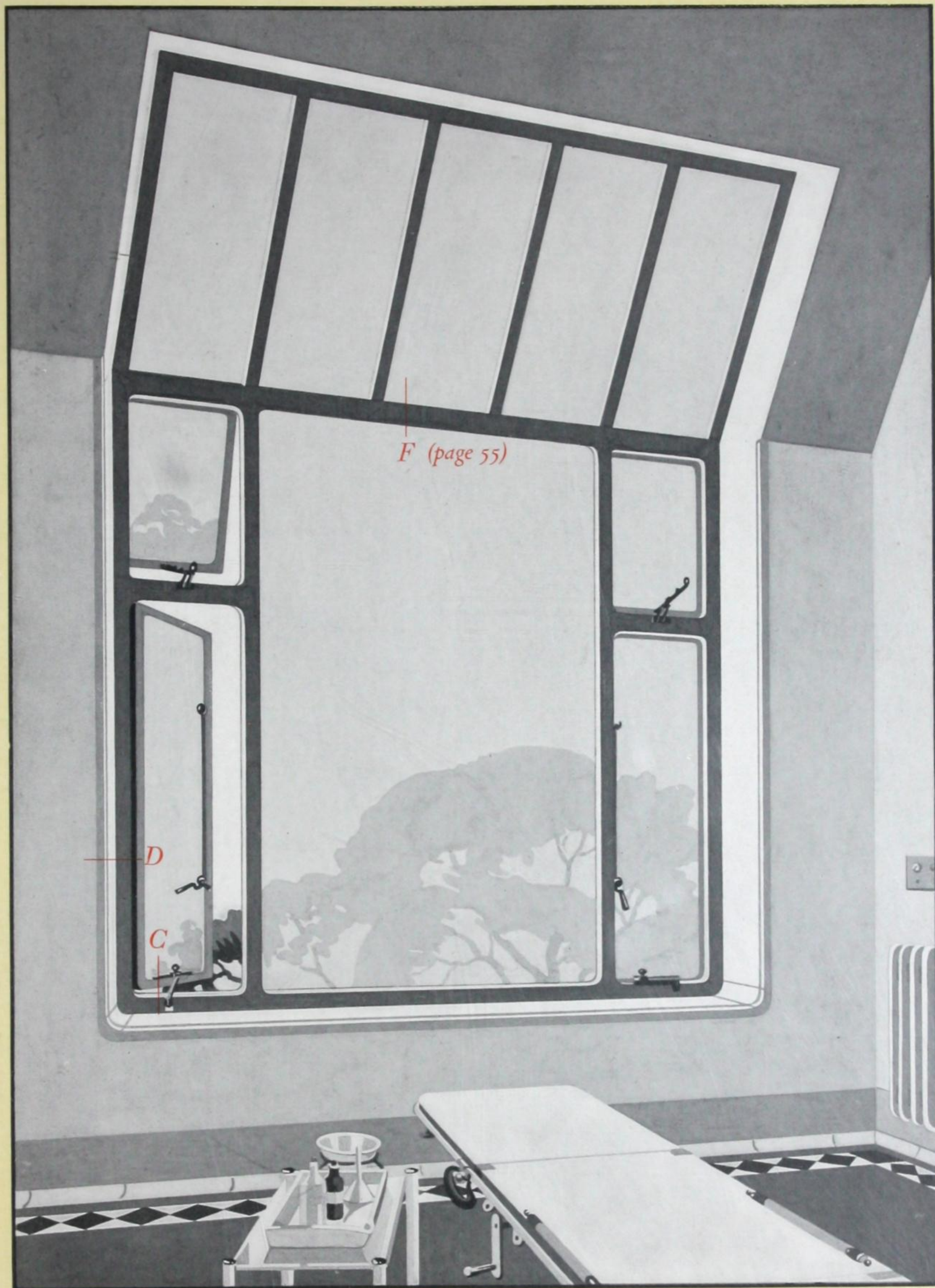
SOLID BRONZE LATCH No. 1336, WITH HANDLES
TO OPERATE FROM EITHER SIDE, AND WITH
SMALL KNOB TO LOCK FROM THE INSIDE
ONLY. AS SHEWN ON PAGE 50. . . .



MORTICE LOCK FITTED IN BRONZE CASE,
WITH BRONZE HANDLES (No. 617) BOTH SIDES.
AS SHEWN ON PAGES 47 AND 48. . . .

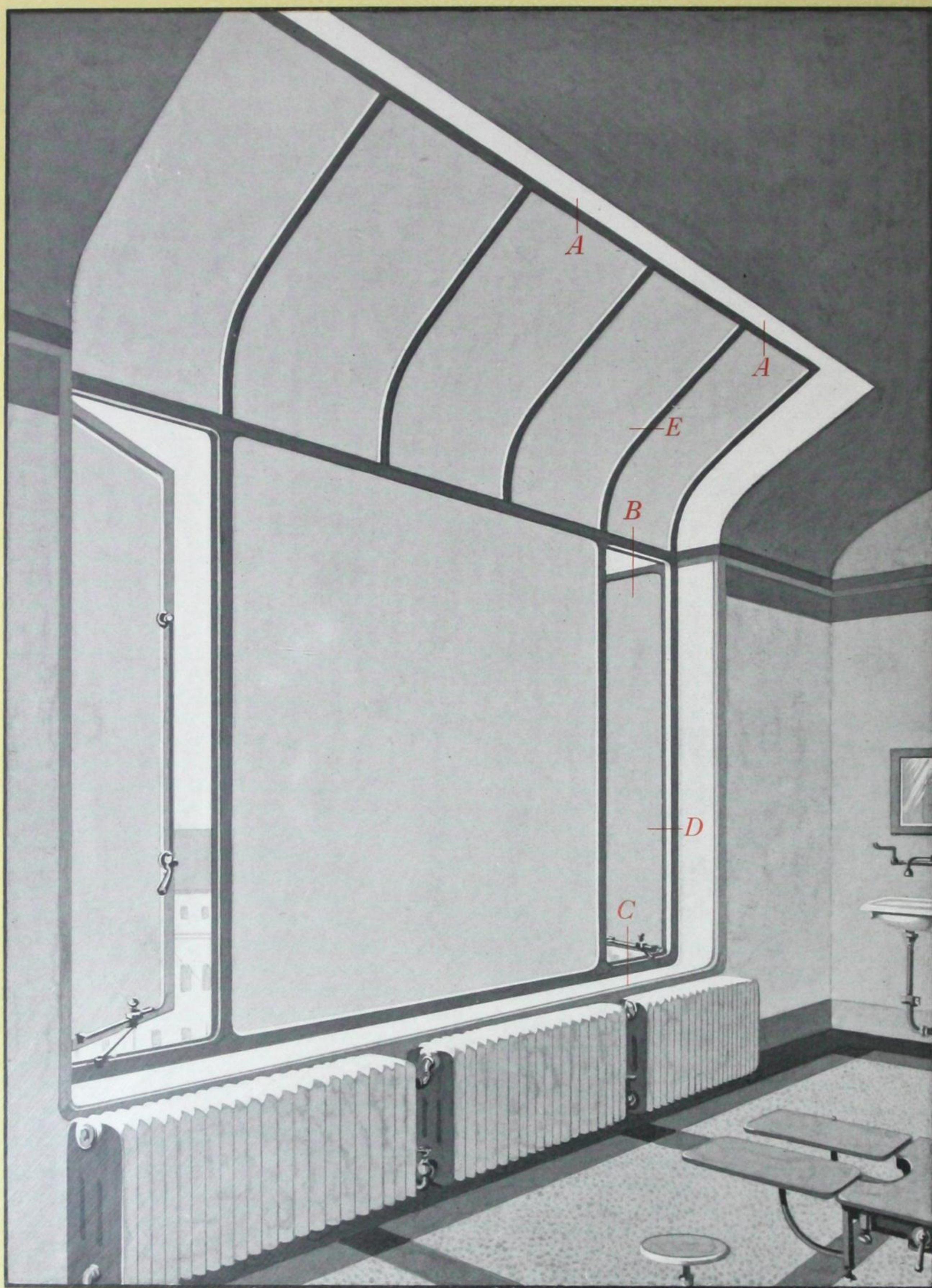
H OPE'S HOSPITAL WINDOWS of all kinds can be constructed to greater advantage in metal than in wood, and the lighting and ventilation of a modern operation room can be more satisfactorily provided by the use of Hope's specially designed steel windows than in any other way. It is now generally accepted by the Medical Profession that a window for an operation room should have a large unbroken area of glass, so as to throw as few shadows as possible, while the portions made to open should be weather and dust proof and of sufficient area to flood the room with fresh air after the operation is over. The illustration on the opposite page shews one of Hope's Hospital Operation Room windows of a design now very generally in use. This provides an unbroken sheet of glass in the middle, with large weather and dust tight casements at the sides, the upper or sloping portion being all a fixture. This design of window thoroughly lights the operation table, and the casements being of large size and easily opened and closed, provide a very wide range of ventilation whenever required. A slightly different type of operation room window is shewn on page 54, and half full size details of both these windows on page 55.

Operation Room Windows



The window illustrated above is 10 feet wide and 8 feet to eaves. The construction is of steel throughout, all joints welded solid and the edges and internal angles rounded. The opening casements are airtight when closed, and by their large size allow for the immediate admission of a large volume of fresh air when required. Detail drawings and estimates for operation room windows will be forwarded on application.

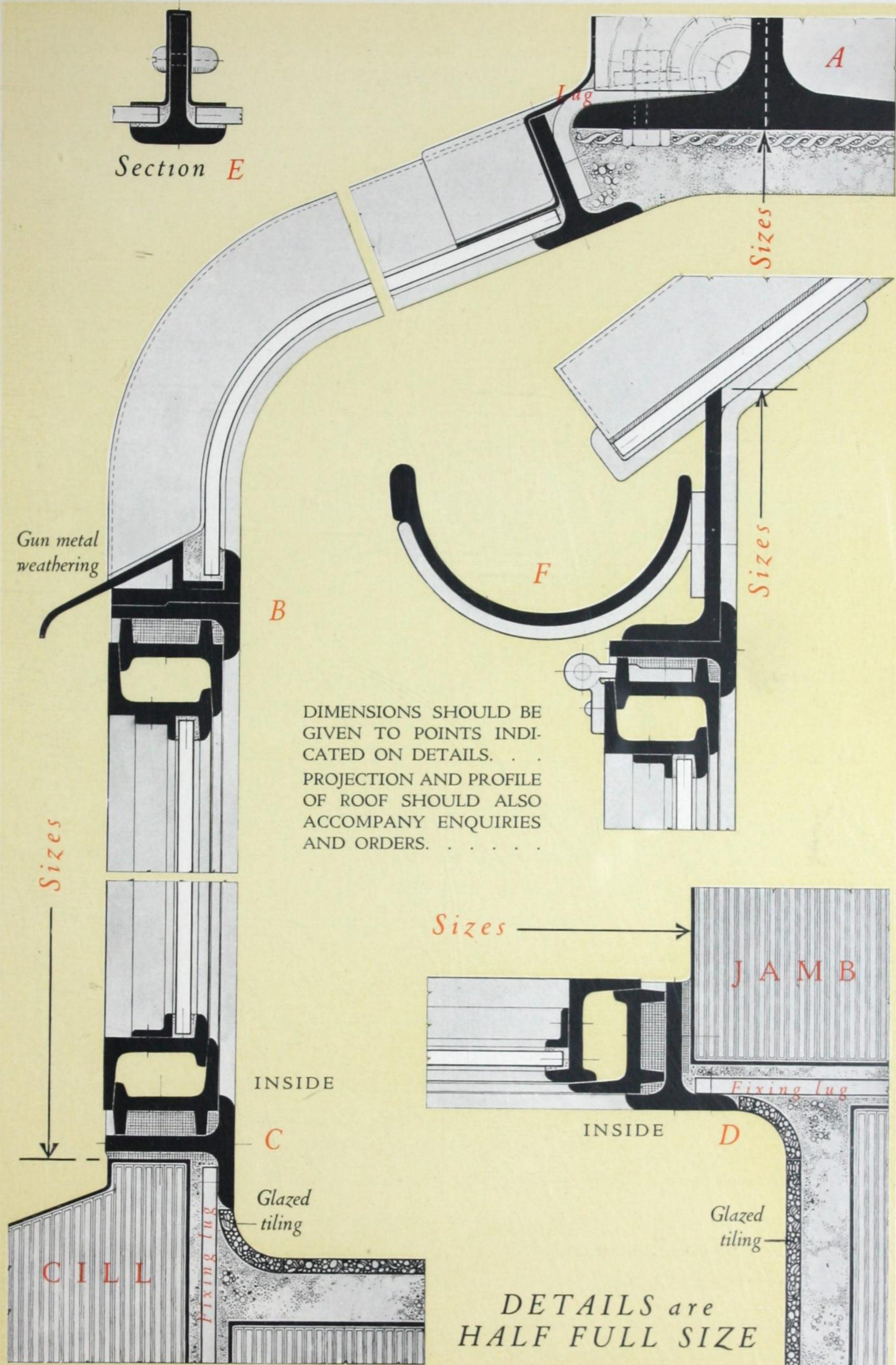
H O P E'S *Operation*



The window illustrated above is 12 feet wide and 7 feet to springing of roof. The construction is of steel throughout, all joints welded solid and the edges and internal angles rounded. The opening casements are airtight when closed, and by their large size allow for the immediate admission of a large volume of fresh air when required. Detail drawings and estimates for operation room windows to meet all conditions will be forwarded on application.



Room Windows





Ordering Instructions



LEFT HAND CASEMENT

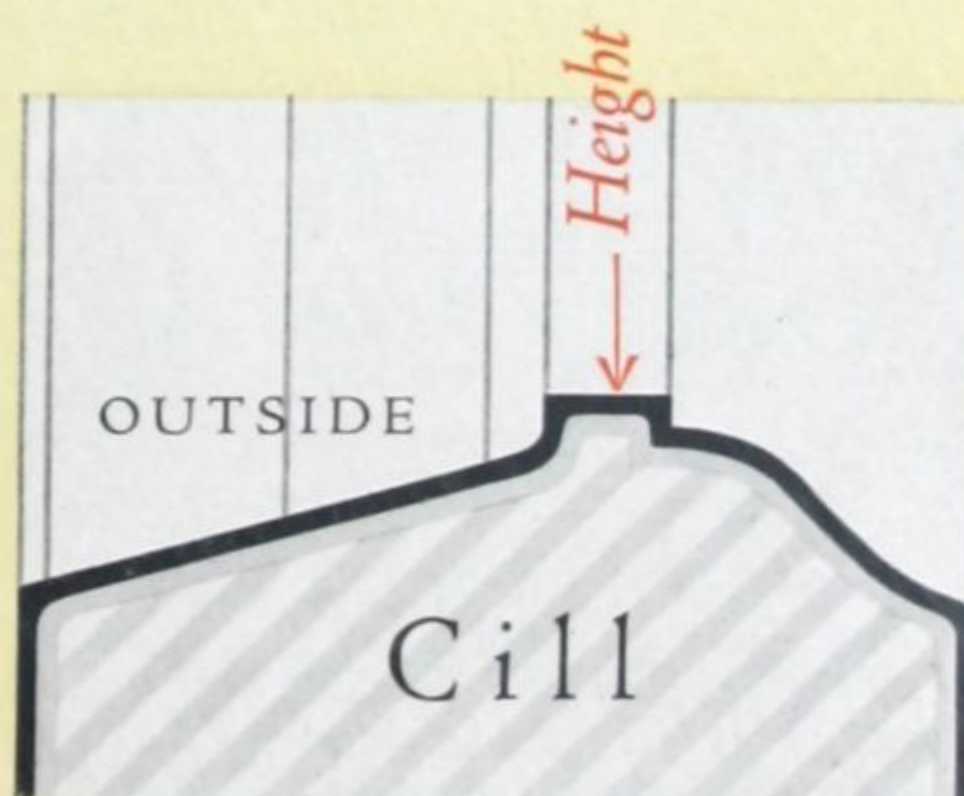
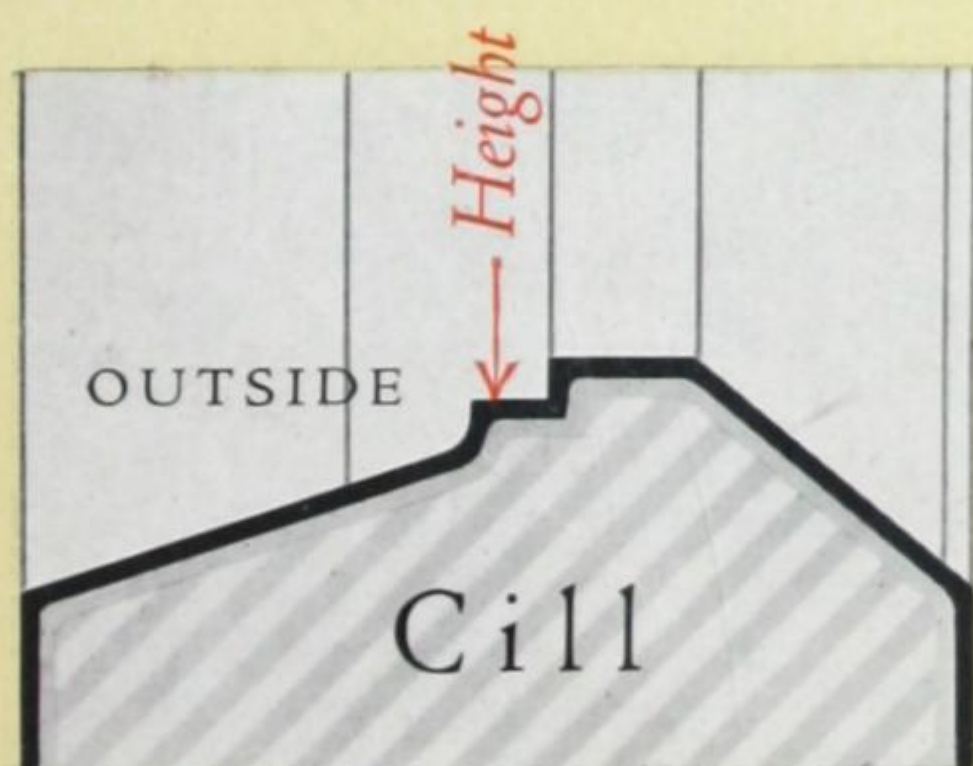
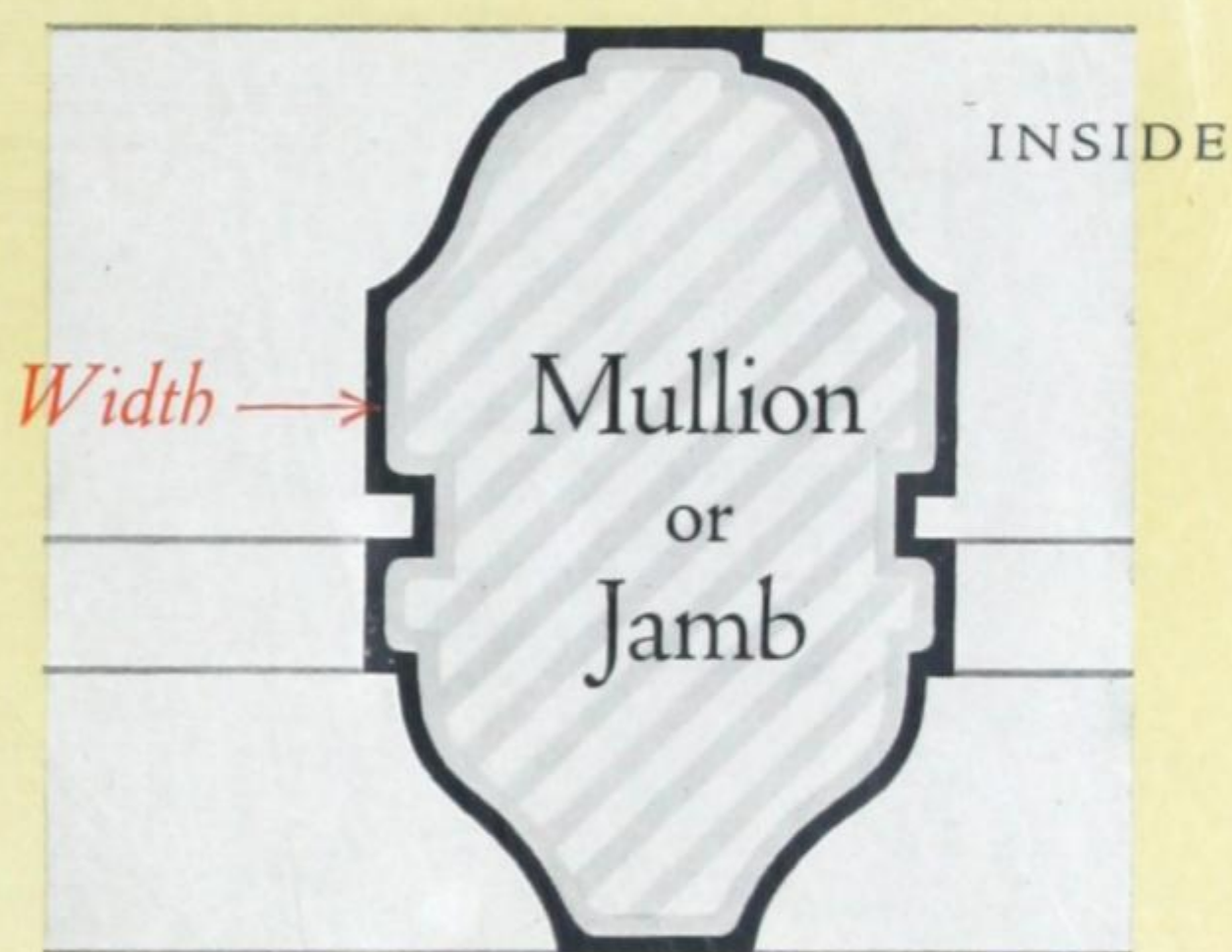
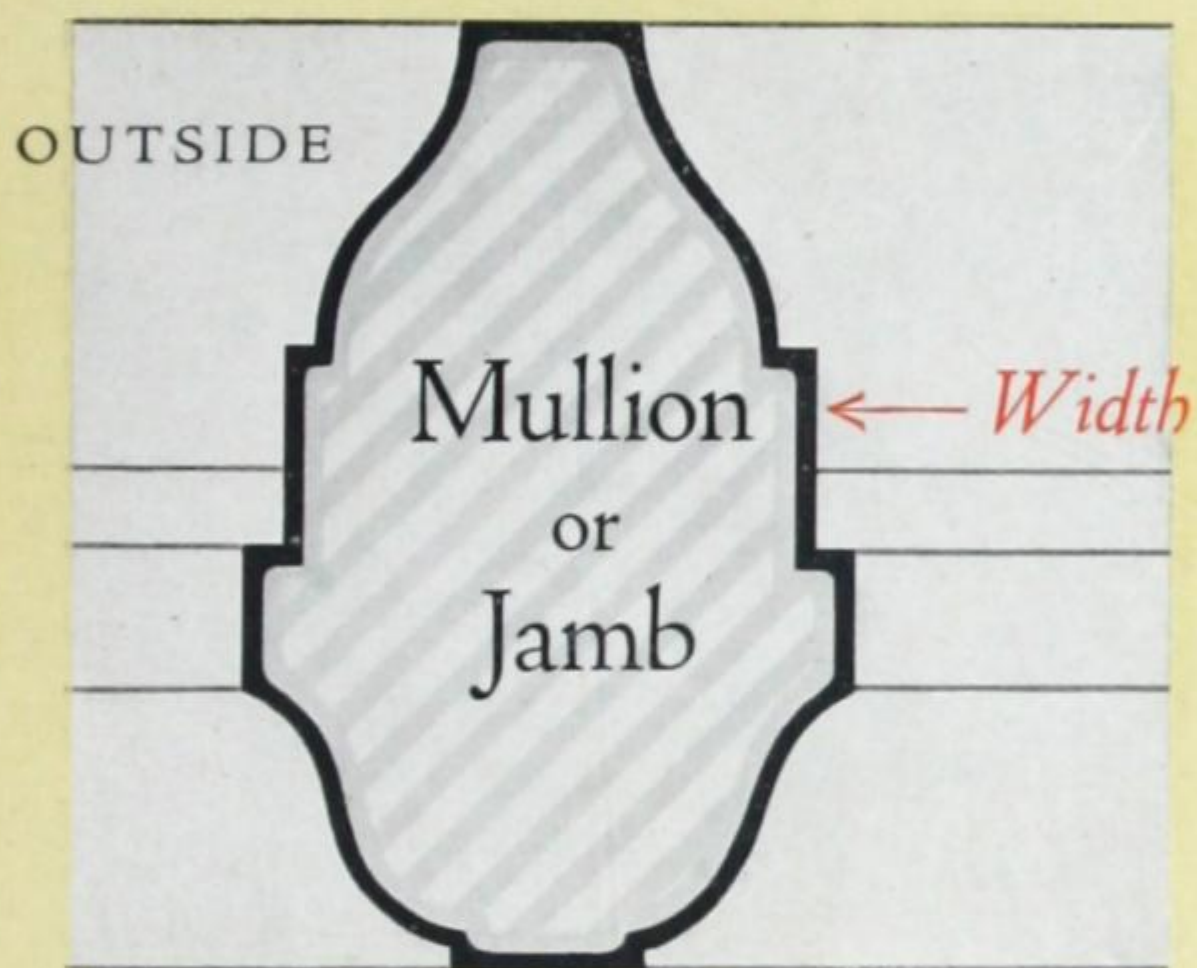
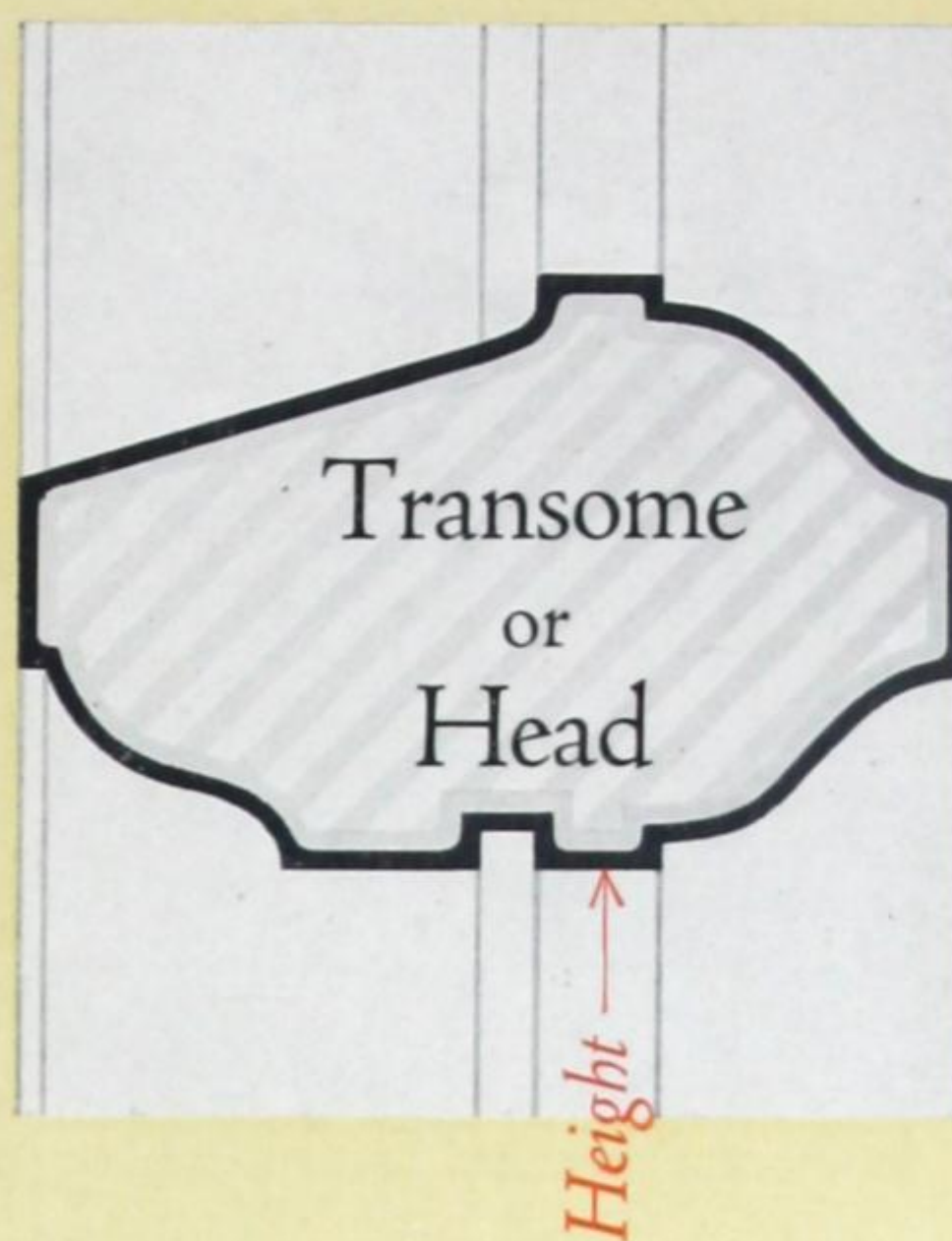
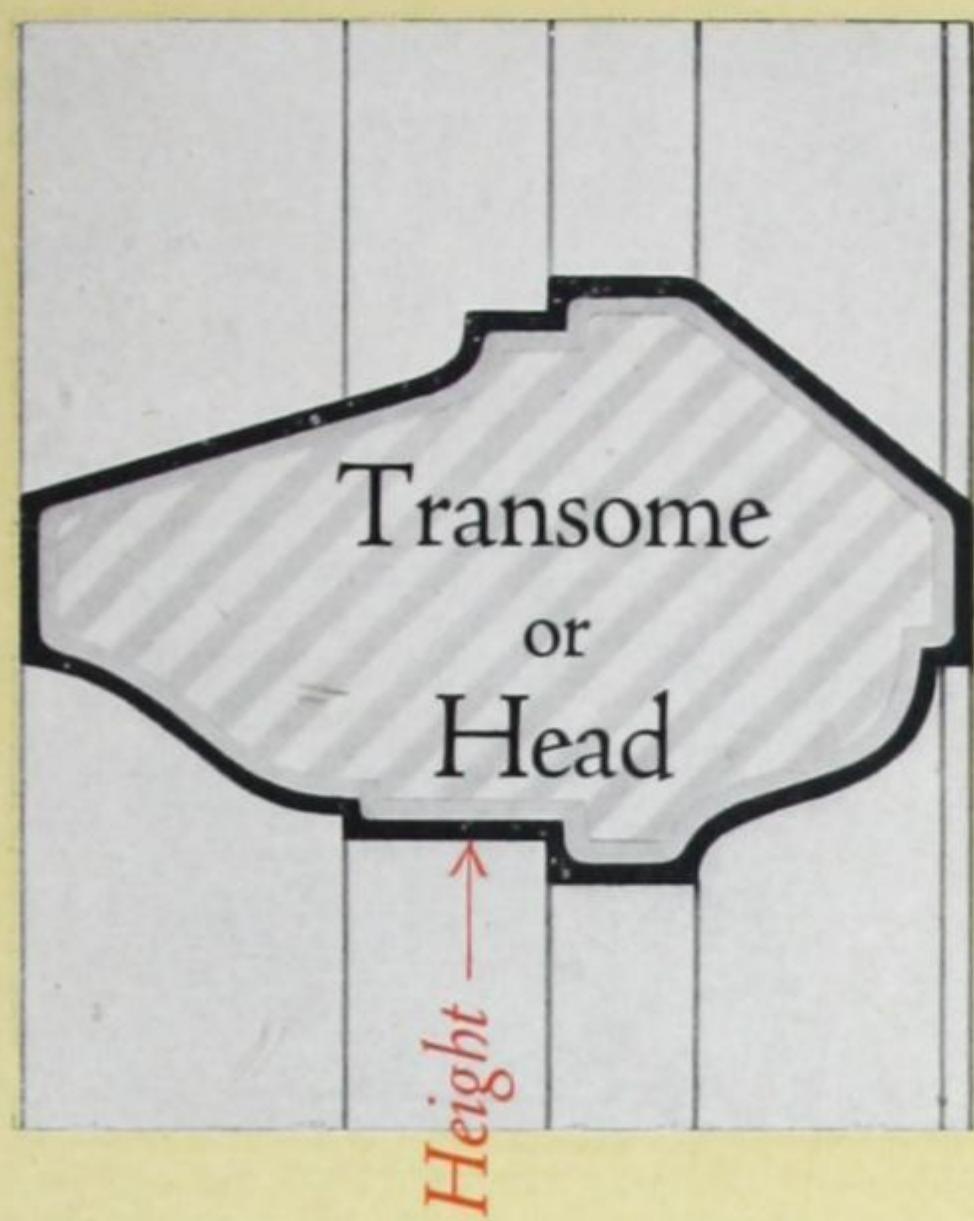
RIGHT HAND CASEMENT

THE following particulars should accompany an order :

1. Exact height and width to points shewn on detail opposite, templates or radii of curves for shaped heads.
2. Full size sections of heads, jambs and cills, and of what materials these are composed.
3. Which hand to be hung, looking from INSIDE. *N.B. The hand of a casement is always on the side of the hinge looking from the inside, whether the casement opens in or out.*
4. Full particulars of the glass to be used, and instructions as to whether this is to be supplied by ourselves or by another contractor. State whether glass is to be fixed with front putty, or with steel or wood glazing beads. If leaded glass or astragals, give design or setting out.
5. The section and quality of casement required. Please note maximum sizes given to each section.
6. State hardware required, giving reference numbers to our designs.
7. State to whom the goods should be charged and consigned, also give nearest railway station.



Taking Sizes



DETAIL 1/4 FULL SIZE SHEWING
HOW SIZES SHOULD BE TAKEN IN
REBATED WORK

DETAIL 1/4 FULL SIZE SHEWING
HOW SIZES SHOULD BE TAKEN IN
GROOVED WORK

Whenever practicable, and in all cases of large contracts, we will send one of our own staff to take sizes free of charge.



Fixing Instructions



Care must be taken to set the casement and frame quite squarely in the opening, and on no account must force be used in putting it in. If the opening is not large enough, the stone or woodwork must be eased, so that the casement will go in easily.

IN STONE OR TERRA COTTA round holes, $\frac{1}{2}$ " in diameter, should be carefully cut opposite the holes in the steel frame. These holes should then be plugged with round lead plugs (A), $\frac{1}{2}$ " in diameter by $1\frac{1}{8}$ " long.

The frame must be well bedded to the rebates with mastic. *Mastic is a special elastic composition which we manufacture and supply in kegs.*

Screw the frame to the lead plugs and take care not to distort or twist it in screwing up. Any distortion or twisting of the frame will shew itself by the imperfect fit of the casement when gently closed, and such distortion should be corrected by loosening the fixing screws, packing or wedging the frame to its correct position where necessary, and re-screwing up.

Tuck and point inside and out with mastic.

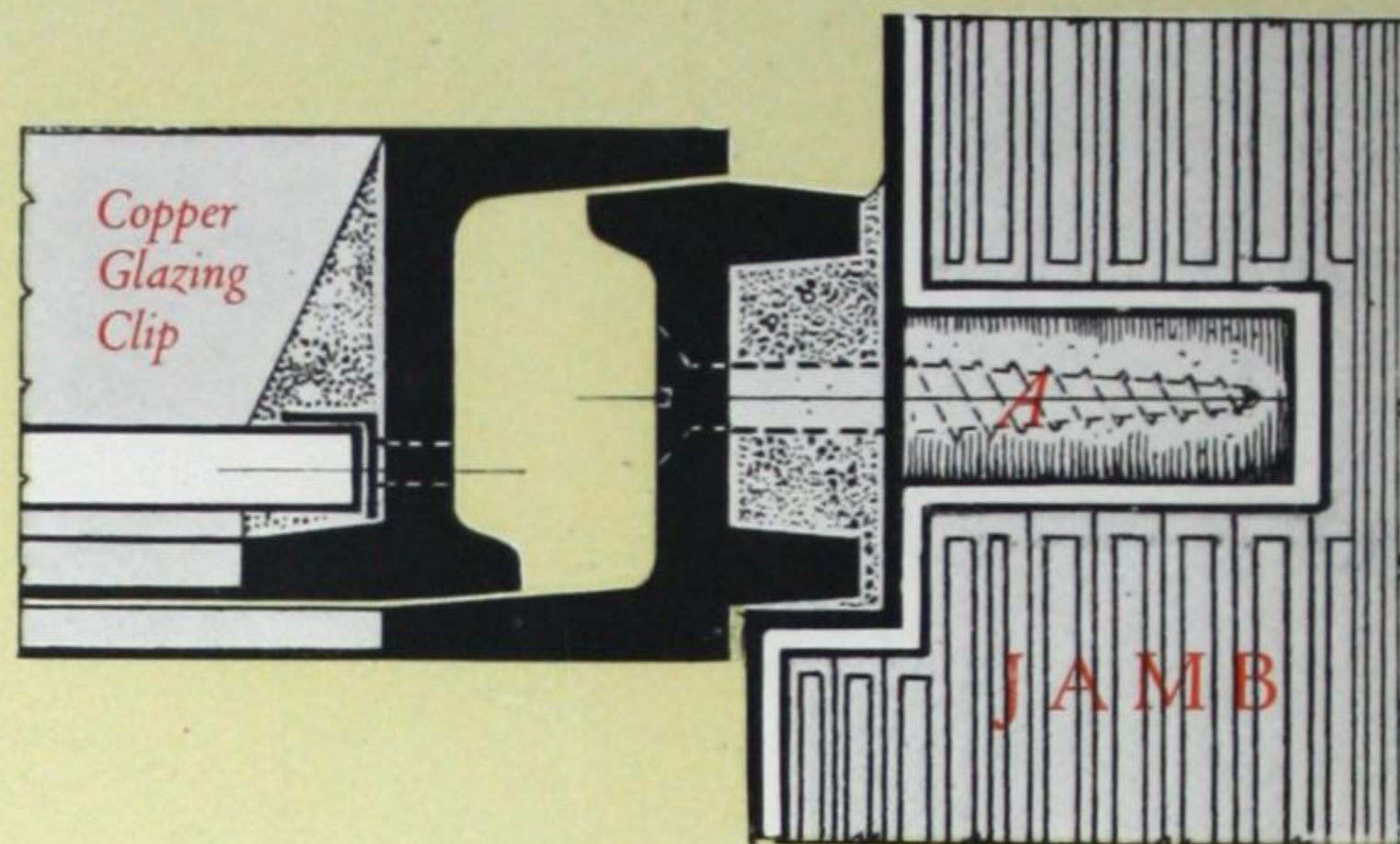
In wood frames the above instructions hold good, except that lead plugs are not required.

FIXING TO GROOVES is shewn at B, and should be done as follows: First remove the angle fillets from the frame, then place them into the grooves, filling the grooves first with mastic, so as to make a good joint. Place the casement into the opening, find the tapped holes in the fillets with a bradawl or steel point, insert screws and screw up. Tuck and point inside and out with mastic.

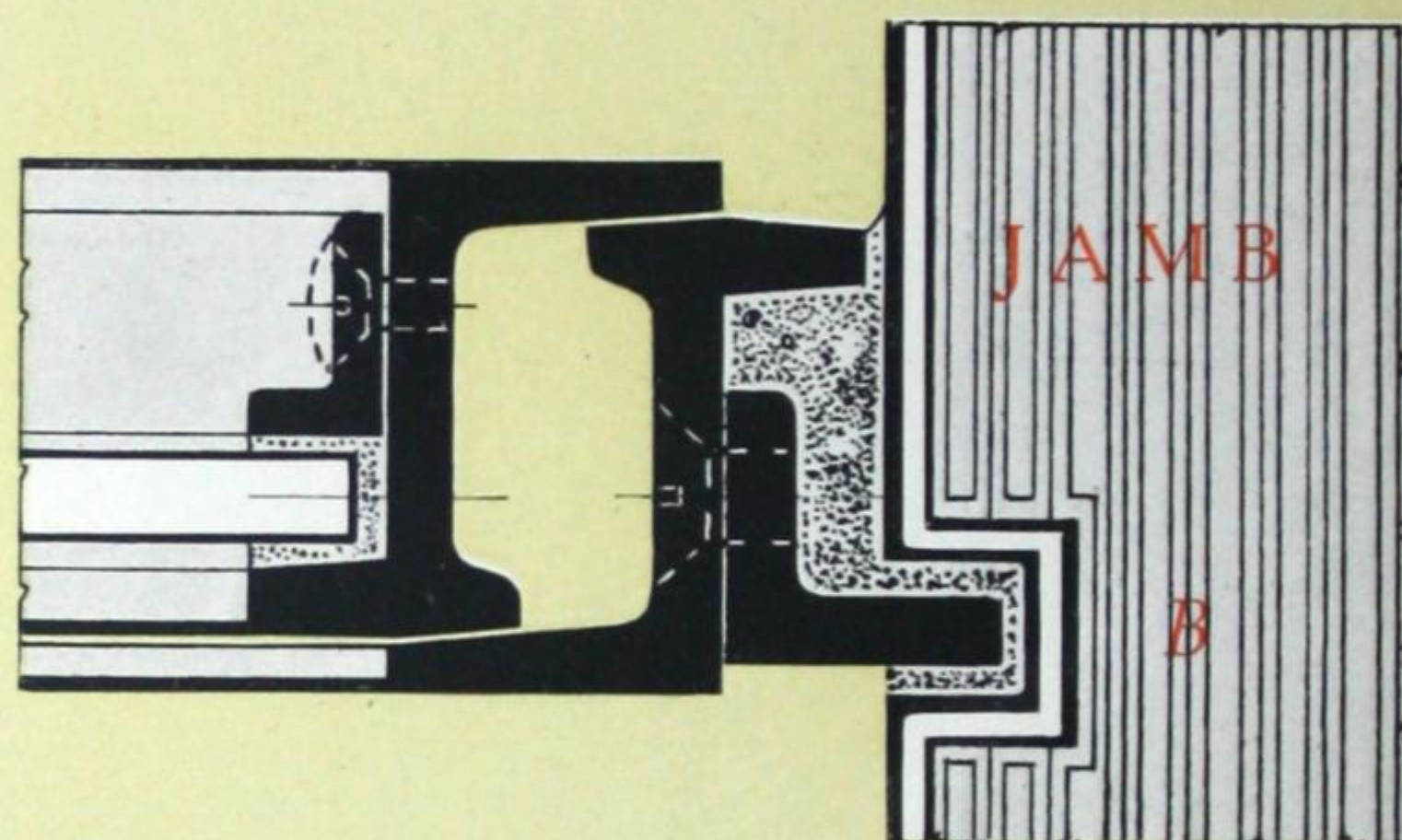
IN FIXING COMPOSITE WINDOWS such as those illustrated on pages 22 to 27 (which are provided with steel lugs for setting into brick or stone joint); the procedure should be as follows: Cut with a narrow chisel grooves of sufficient width and depth to accommodate the lugs in the correct positions. Remove the lugs from the window frames and place them in these, then carefully push the frame into the opening against an ample bedding of mastic and screw the lugs up to frame, and wedge and grout the lugs in their places with strong Portland cement.

NOTE. Care should be taken not to disturb the setting by opening and closing the casement, or attempting to put in the glass until the Portland cement has set.

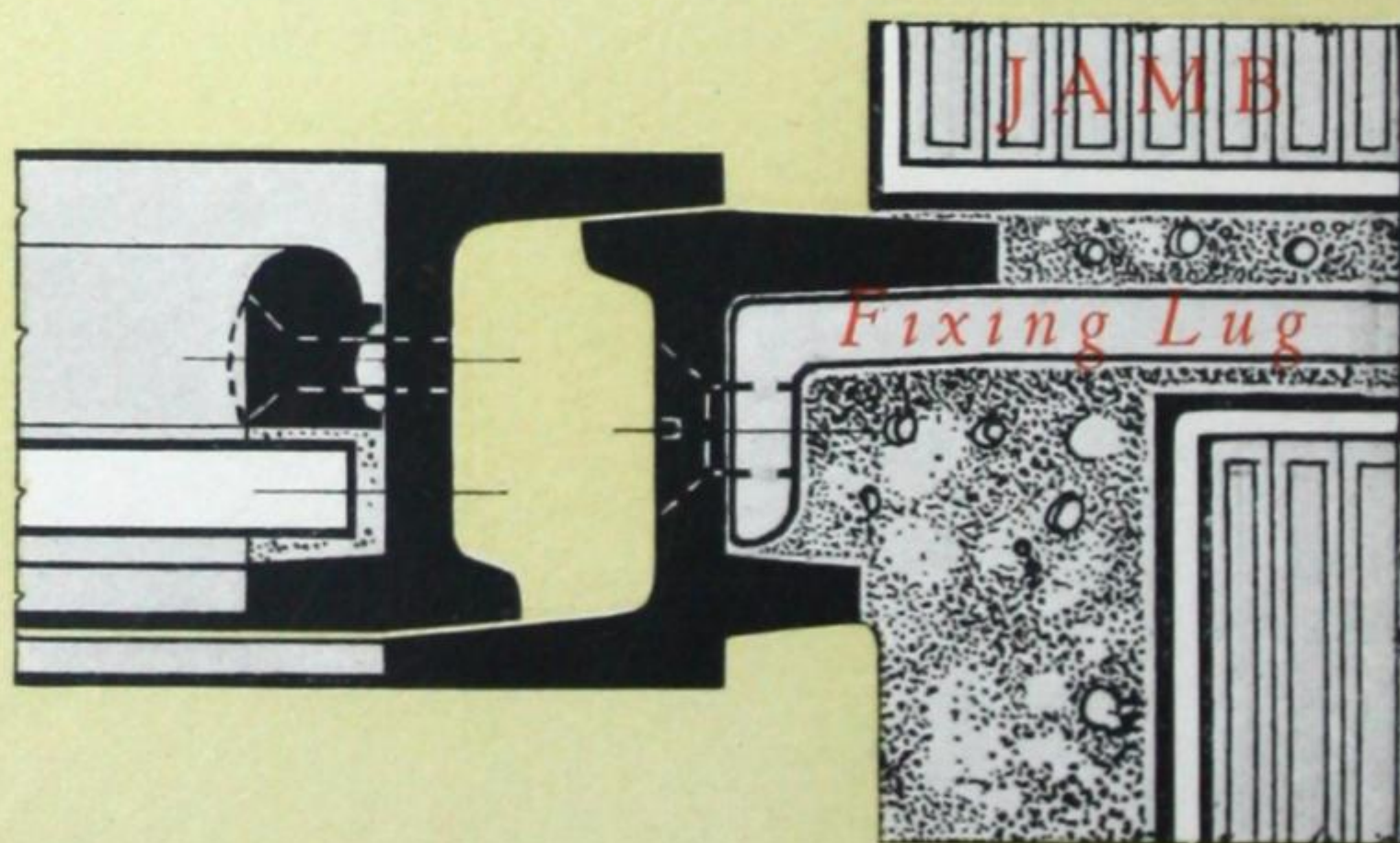
In no case should casements be set in place until the building is clear of the rougher trades. Where it is desirable to protect floors and plastering, canvas screens can be placed against the window frames at a very small cost. If casements and glazing are put in soon enough to effect this purpose they are certain to be damaged.



FIXING to REBATES



FIXING to GROOVES



FIXING to REBATES
WITH INTERNAL PLASTER FINISH

DETAILS ARE FULL SIZE



Glazing Instructions



B

The tendency of all side hung gates, doors or windows is to "sag" or pull gradually from a rectangular to a rhomboidal form. With steel casements there is one certain way of preventing "sag," and that is by the method of fixing the glass. Rightly fixed, the glass takes up the compression stresses, acting diagonally, and keeps the casement in true shape for all time. Wrongly fixed, the putty allows sufficient play around each pane for sagging to occur sooner or later, with the result that the bottom bar of the casement jams on to the bottom rail of the frame.

THE RIGHT METHOD OF SETTING GLASS *in* ALL SIDE HUNG CASEMENTS

(1) See that the casement opens and closes perfectly, and bed the glass in putty in the usual manner. (2) Insert a chisel between the edge of the glass and the casement on the hinged side, at the bottom (point A), and lever the glass slightly out of square, making it take up a position as shewn (much exaggerated) in this photograph. Then at the point A, between the glass and the casement, insert a small wedge of hardwood or lead. (3) Open the casement, and with a chisel or other lever, between the casement and frame at point D, raise the entire casement slightly. This will release the contact between the glass and the casement at point B, now insert another wedge at point B. The wedges must be left permanently in position, and the glazing can be completed either by turning over the glazing clips and front puttying; or by putting on glazing beads, where these are provided. The wedges should be just thick enough for a tight fit.

The front putty should be left at least fourteen days before painting, so as to allow it time to set. If the front putty is painted before it is hard, it will remain soft and is always liable to "run." Keep the front putty as narrow as possible: a wide splay of putty increases liability to "run" and makes a slovenly job. Ordinary glazier's putty must not be used, as this will never set hard on metal.

FORMULA RECOMMENDED: Add to 100 lbs. of pure linseed oil putty 1½ pints of gold size, and mix thoroughly to a stiff compound, use fresh after mixing.

D

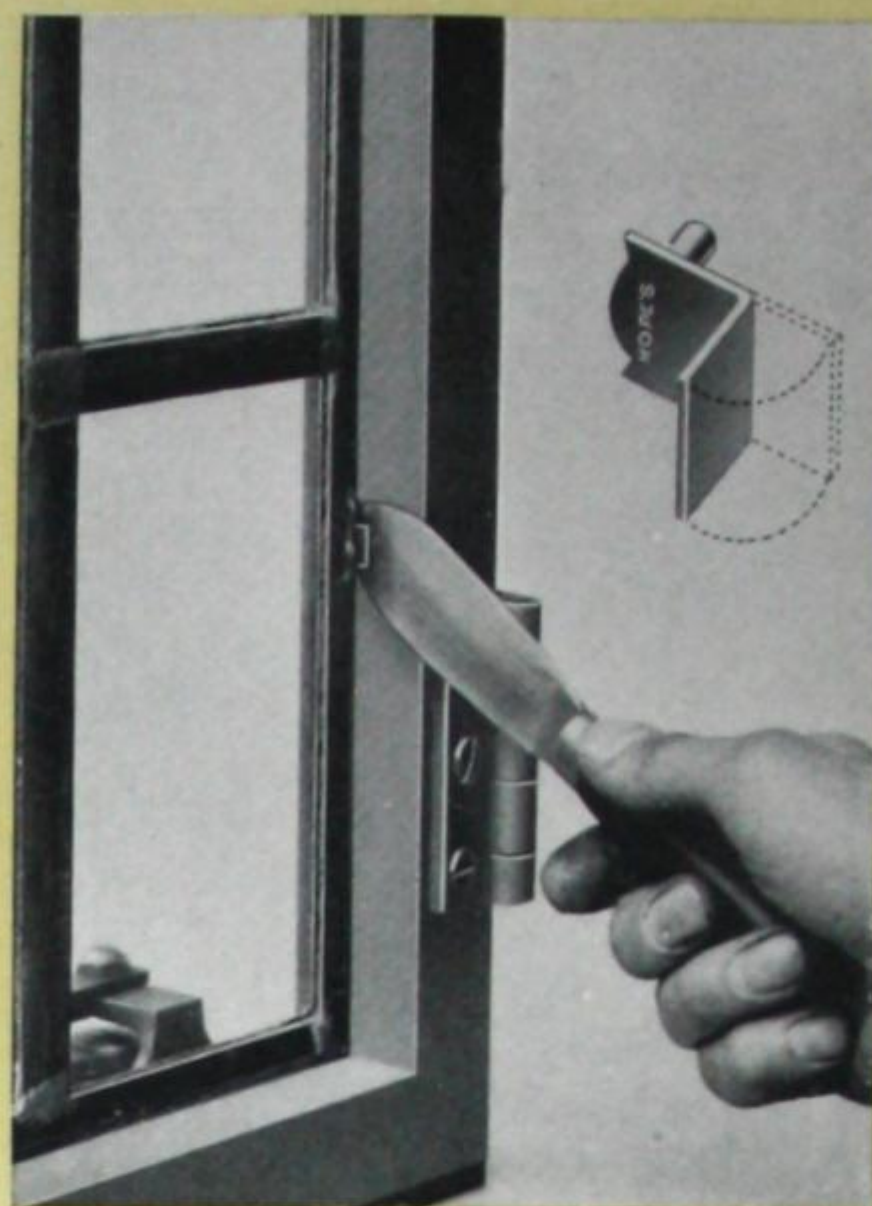
A



Glazing (continued from page 59)



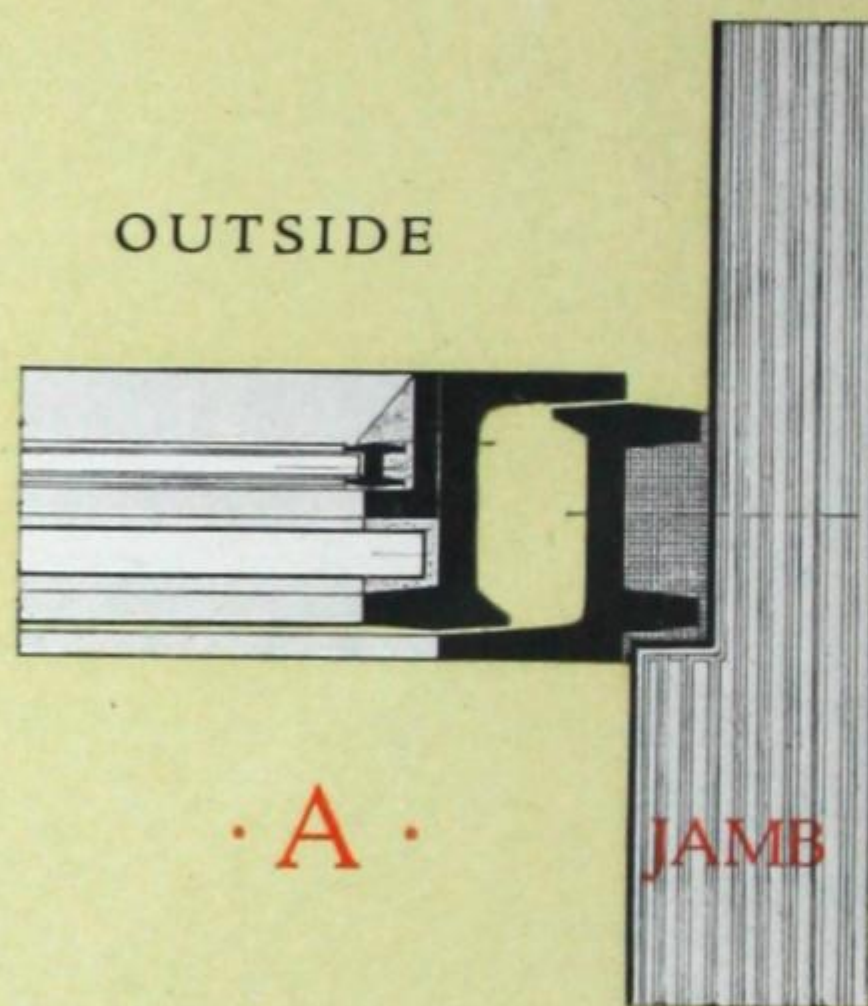
Glazing Clips. All Hope's casements are provided with these patent clips, except where glazing beads are used. They hold the glass more securely than any form of loose peg or clip, and save time in glazing. It is only necessary, after bedding the glass in putty, to turn the clips over with a putty knife, as shewn in the illustration.



Glazing Beads. For casements with large sheets of glass, and for all best work, we recommend glazing beads of galvanized steel or hardwood. Steel beads are fitted and screwed to the casements with brass screws in our works. Wood beads may be cut and mitred at the building without preliminary fitting.

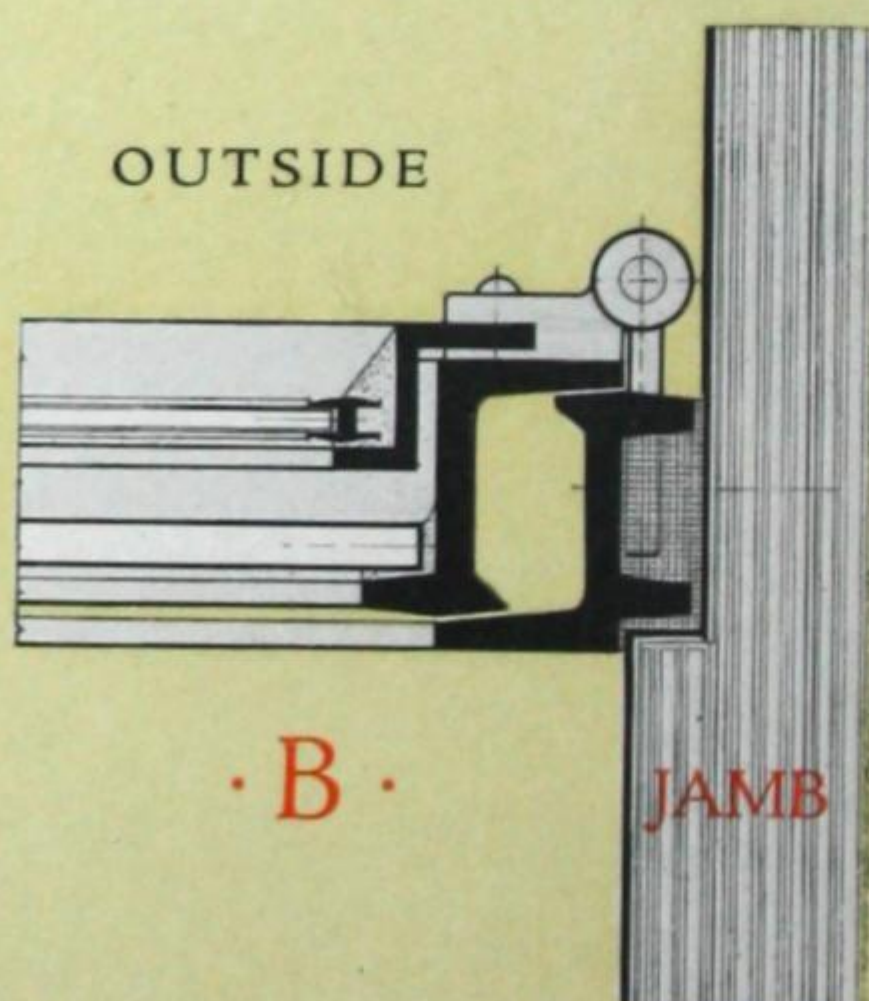
DOUBLE GLAZING

can be effected in two ways. The section of jamb marked "A" illustrates the use of two panes of glass separated by a fixed L section bead. The glass must be very carefully cleaned before being set in place, and if care is taken that both panes are soundly and neatly bedded in putty, this makes a good job, but it cannot be guaranteed against halation.



The section of jamb marked "B" provides for cleaning both panes of glass on their inside face. A bronze outer casement is attached with Hope's double-flanged hinges, and is fitted with a bronze bolt on the closing side.

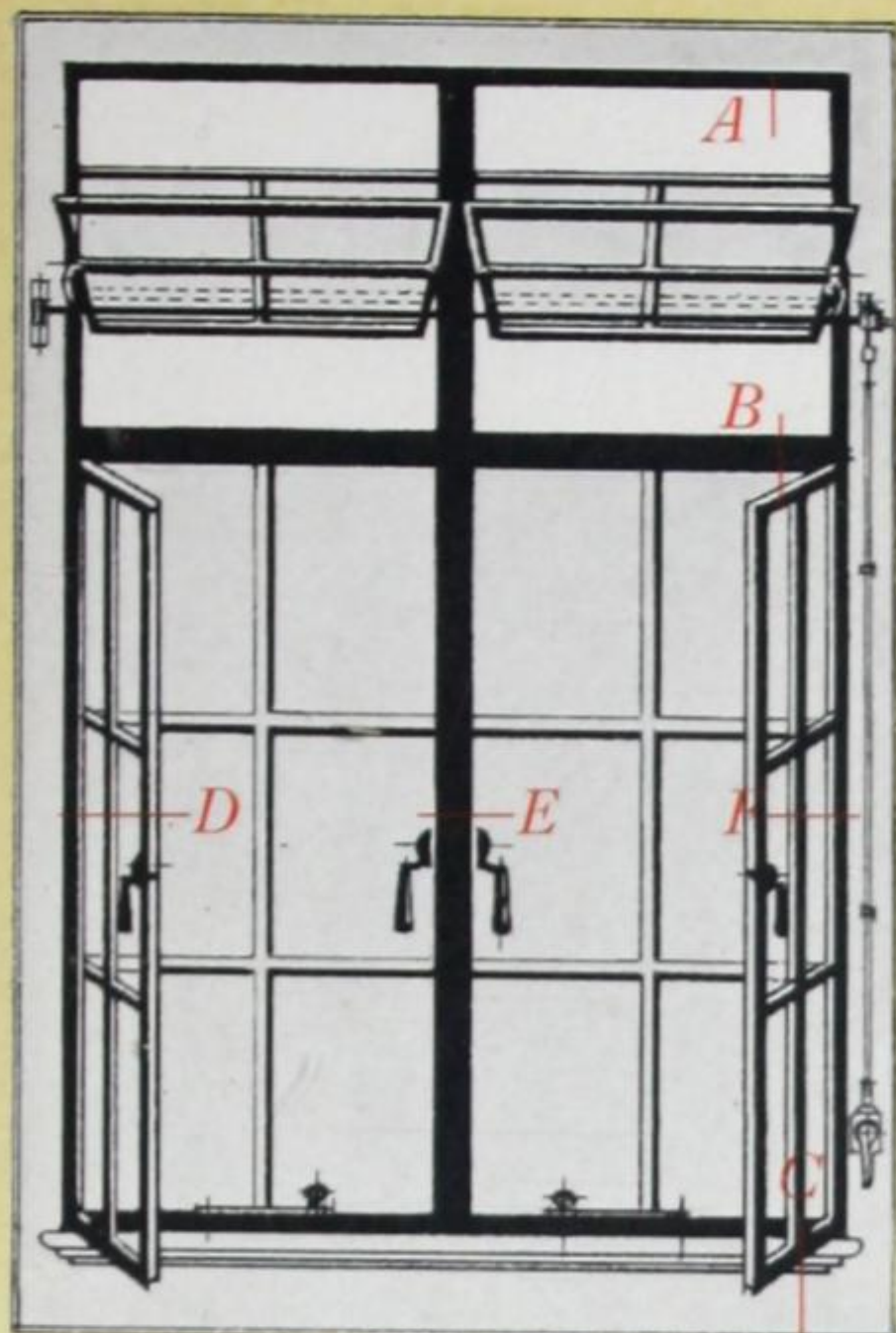
This design can only be applied to casements not exceeding 5 ft. 0 in. by 2 ft. 0 in.



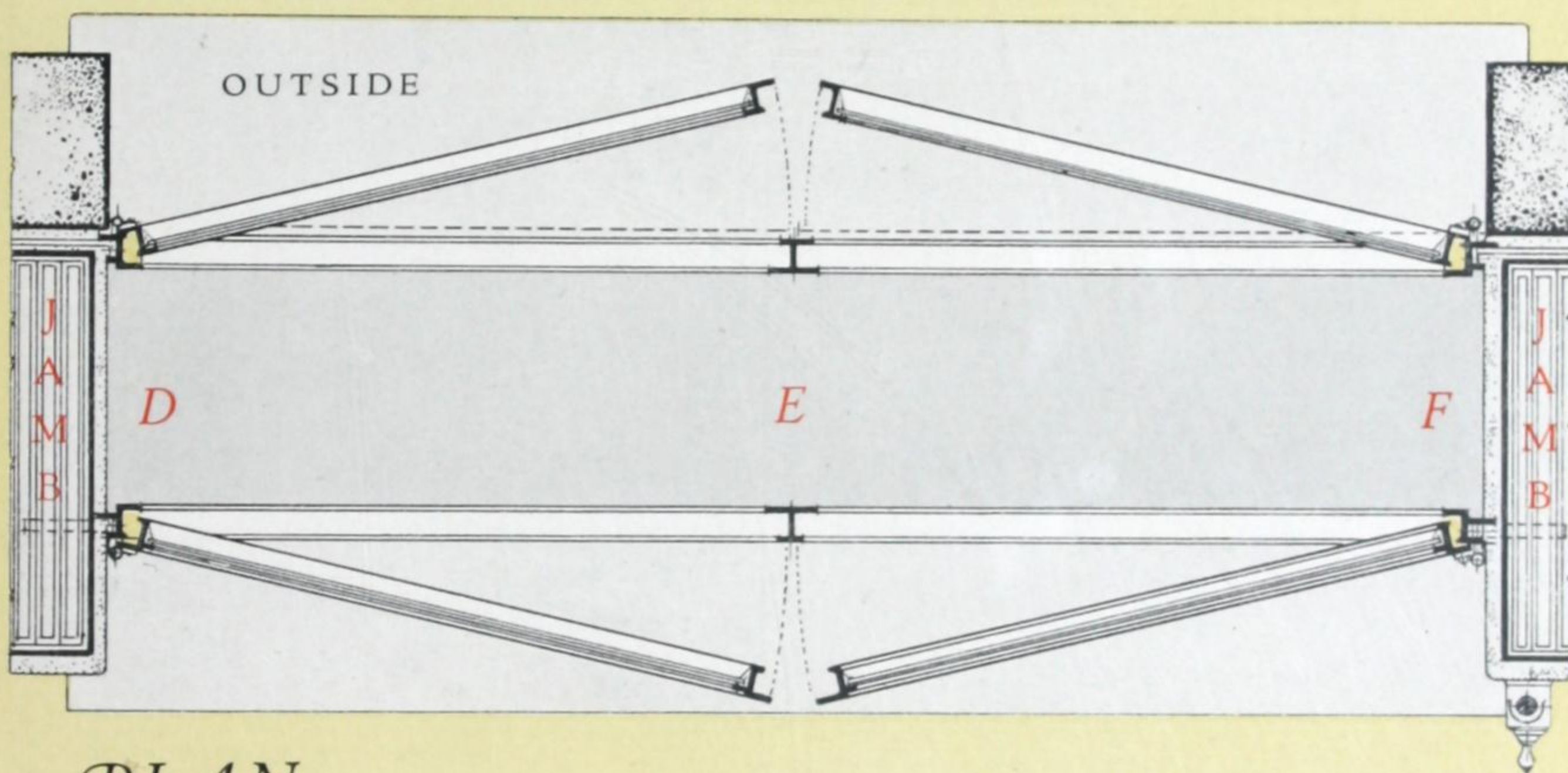
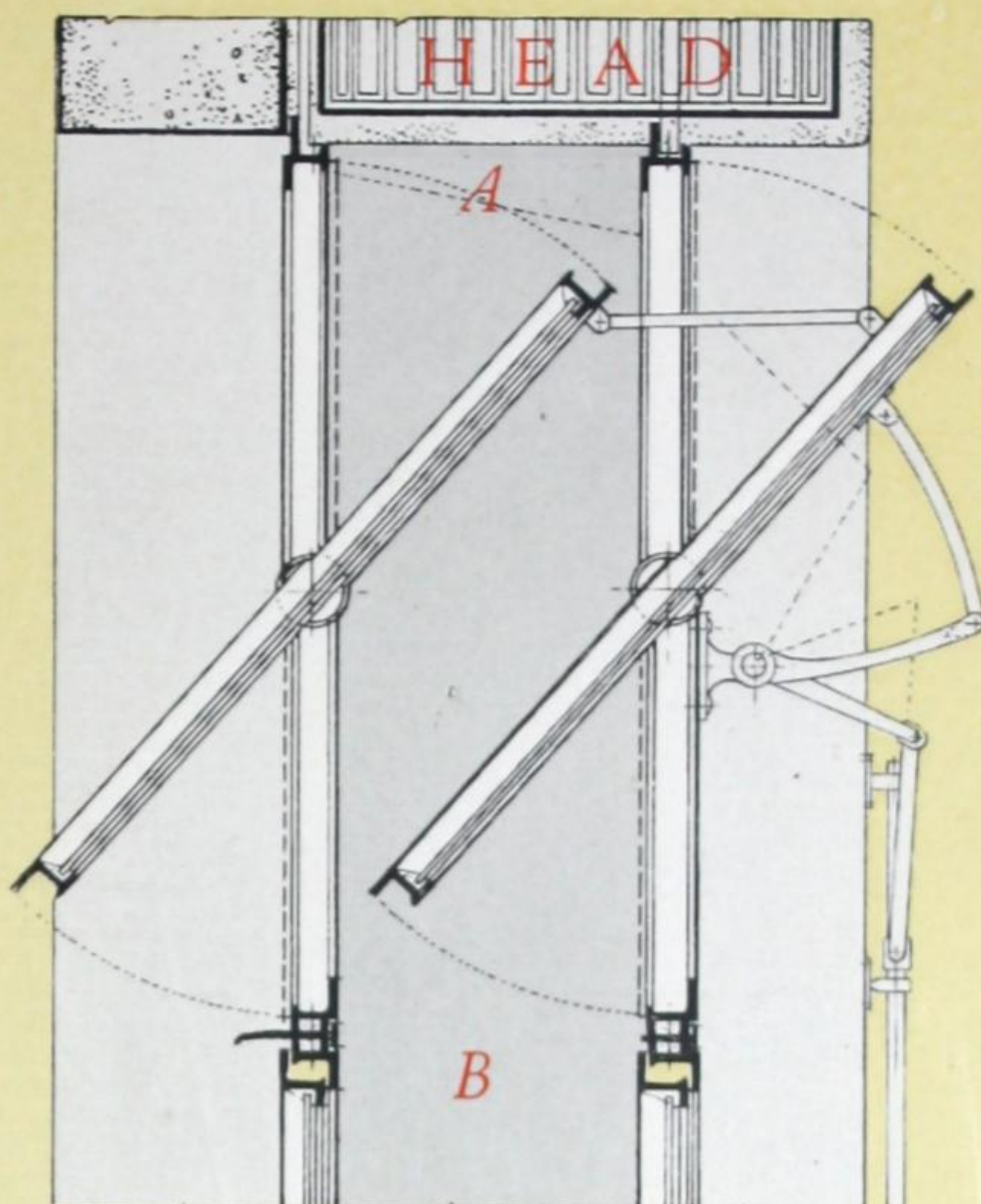
DETAILS HALF FULL SIZE



Double Windows



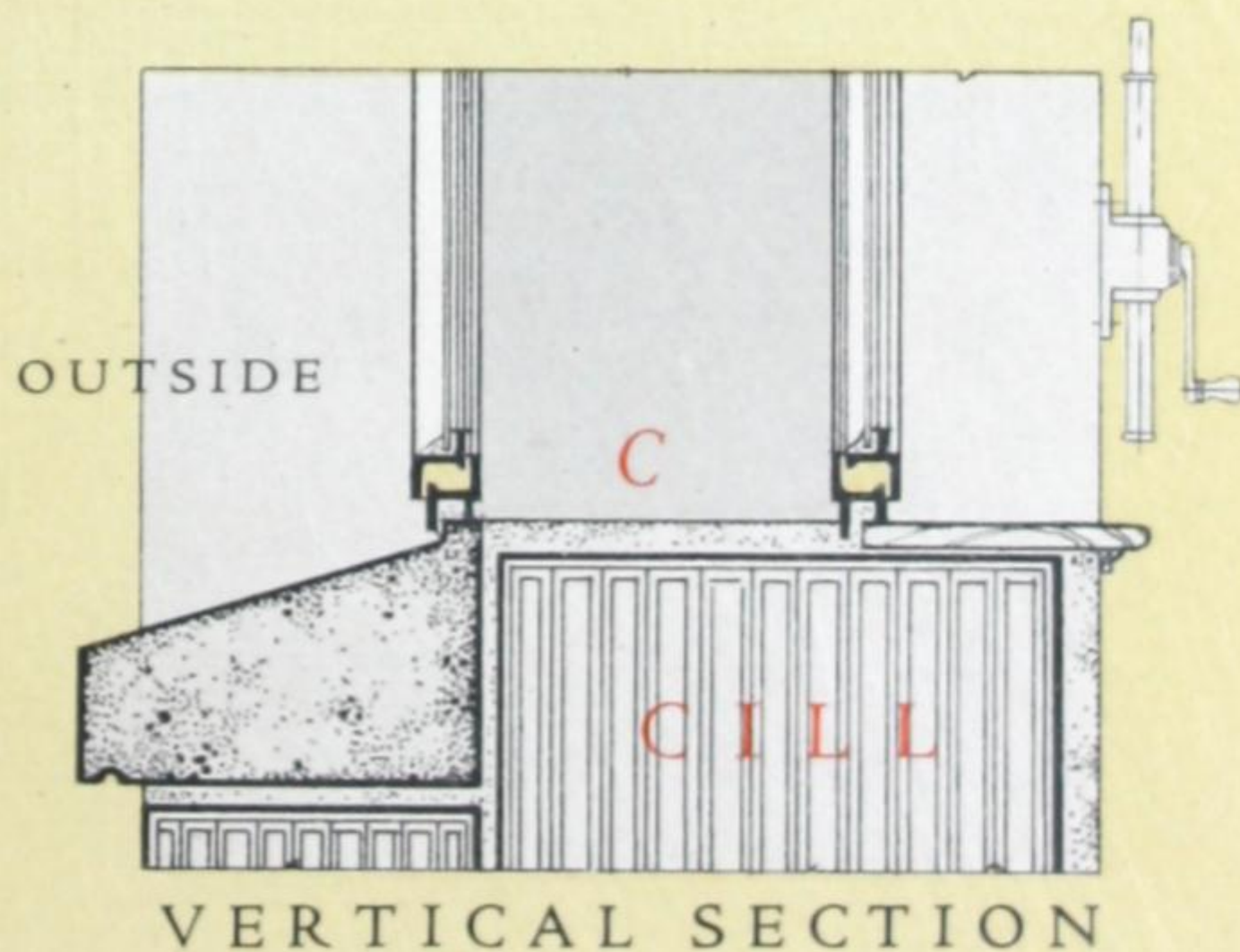
Elevation shewing inside windows open for cleaning.



PLAN

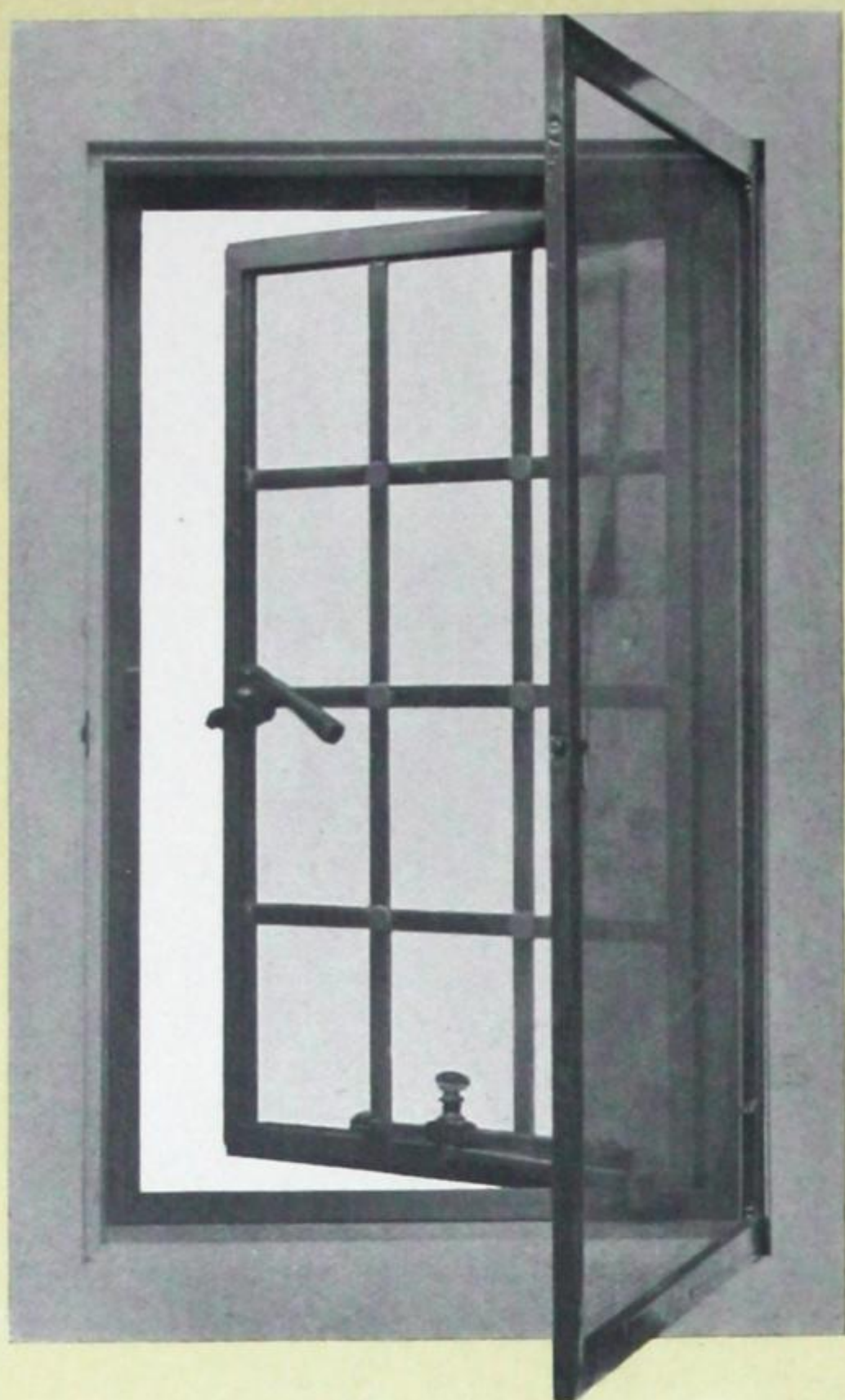
For the efficient exclusion of sound, double windows should be used set separately into the masonry. These details illustrate a design which has been used with success on important mercantile buildings. . . .

DETAILS $\frac{1}{8}$ FULL SIZE





Fly-Screens



Photograph of a Hope's casement, opening outwards, and fly-screen hinged at side to open inwards.

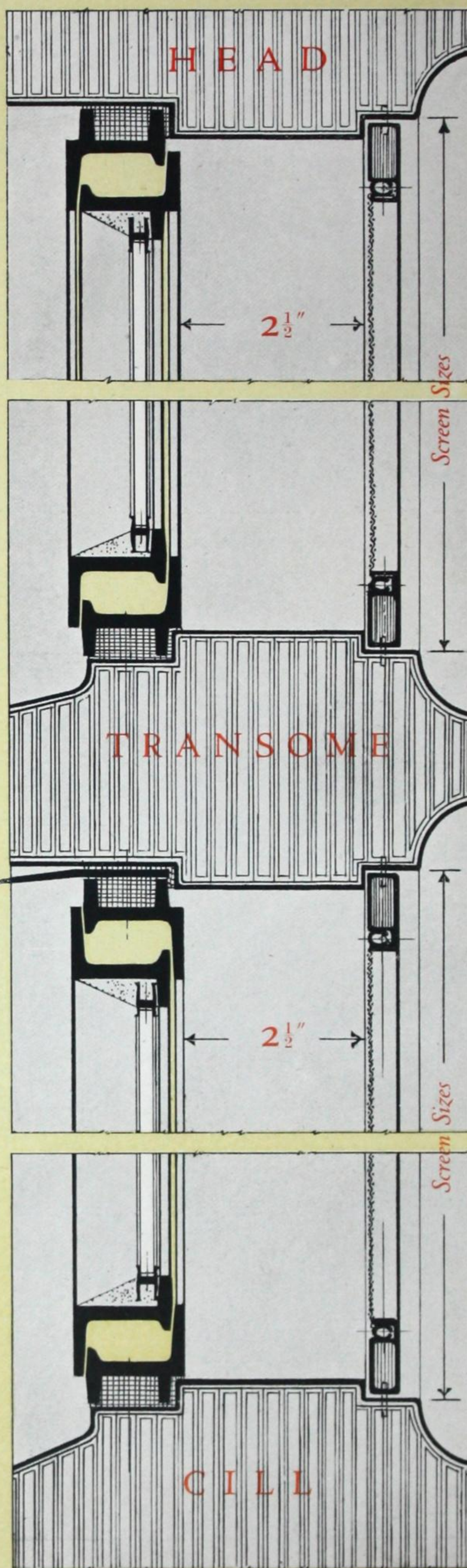
These fly-screens are made of bronze with 14-mesh bronze wire cloth, fitted with spring pivots, which allow for easy removal in winter.

Frames should be rebated on the inside, as shewn on detail, and not less than $\frac{3}{8}$ " deep. Where a rebate is not provided, the fly-screen can be made to hinge and close against the face of the wood frame.

In all cases for outward opening casements, a space of $2\frac{1}{2}$ inches should be allowed between casement and fly-screen for hardware clearance.

We have supplied thousands of these fly-screens in conjunction with our metal casements in the United States and Canada, and can strongly recommend them for this country for larders, pantries, kitchens, dairies, etc.

DETAILS $\frac{1}{2}$ FULL SIZE



HOPE'S *Leaded Glazing*



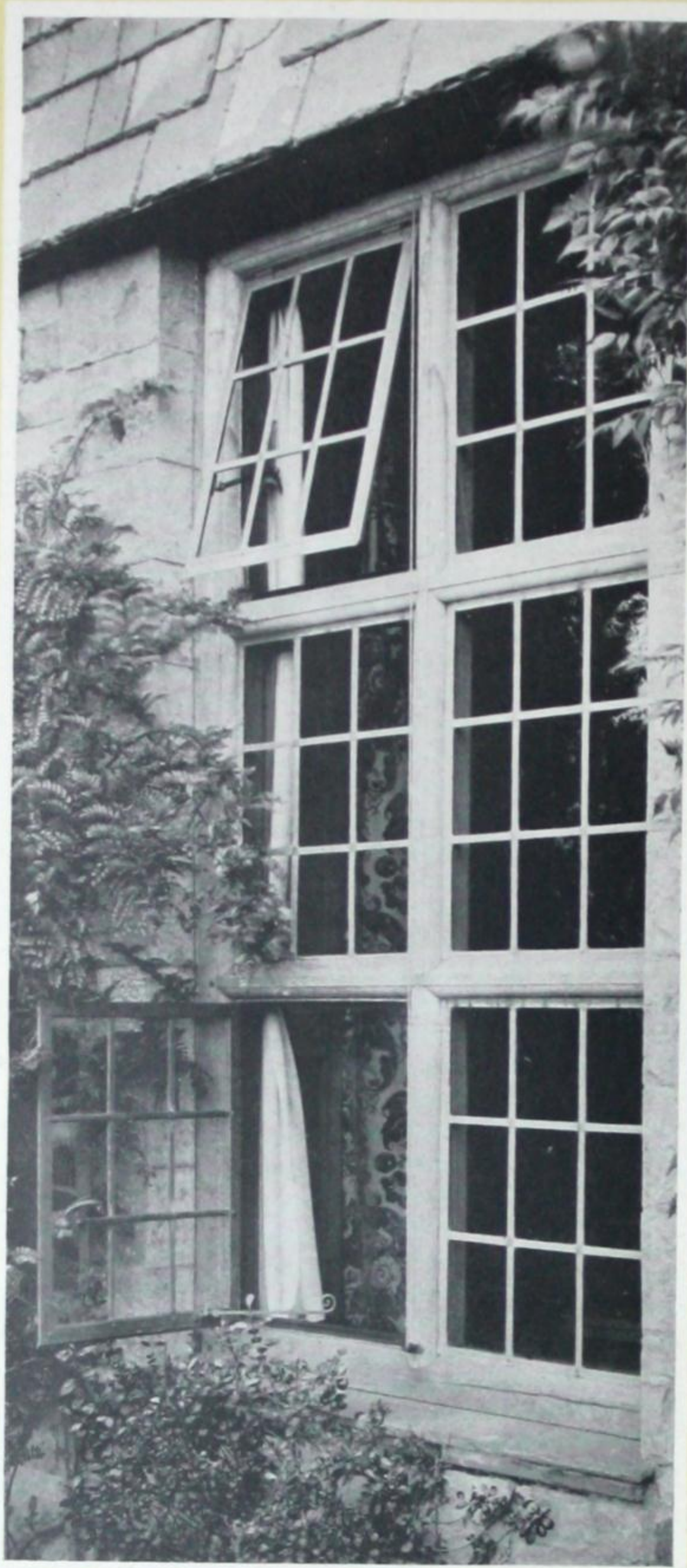
LITTLE RIDGE, TISBURY

DETMAR BLOW, *Architect*

THE architectural value of leaded lights is well shewn in the above illustration; without the lead comes, the window openings would be bare and uninteresting; any additional ornament would be superfluous. Plain squares are exactly what are required, and take a proper place in the building.

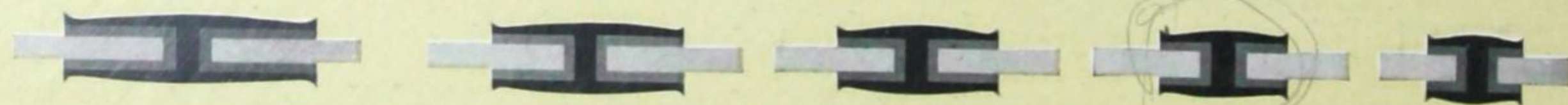
NOTE. All our leaded glass is made in the best possible manner by skilled men, and is thoroughly well cemented and soldered on both sides.

HOPE'S *Leaded Glazing*



THE ABOVE ILLUSTRATION SHEWS LEADED LIGHTS SET OUT INDEPENDENTLY (THE METHOD WE RECOMMEND). LEADS CAN BE MADE TO LINE IF DESIRED. THIS SHOULD BE STATED WHEN ORDERING.

GLASS. A large variety of glass is kept in stock, including sheet, plate, genuine unflattened crown, old Dutch, antiques, ambetti, Norman slabs, sheet cathedral, opalescents, etc.



LEAD CAMES. We manufacture lead comes of any size. Sections in general use shewn above. Leaded windows require reinforcement, and this is done either by saddle bars, fixed on the inside, or by steel cored comes. The former is the better and also the traditional method.

NOTE. We wish to emphasise the advantage of having leaded lights made under the same supervision as the metal casements. It ensures perfect accuracy in the relation of saddle bars and handle plates to the leads, and we take responsibility for all dimensions.

PLAIN SQUARE GLAZING

FOR the majority of buildings, plain square glazing is the most appropriate treatment, but to obtain the best results it is necessary to determine the size of the pane unit and its proportion before designing the window openings, so that the proportion of the openings above and below transoms will appear a proper relation to the smaller units of the leaded glass and to each other. The proper width of the lead comes, and the quality of the glass to be used, will be influenced by the scale and design of the building, but speaking generally, lead comes should not be less than $\frac{1}{2}$ " in width, and for domestic work unflattened crown glass should be used whenever possible.

Unflattened crown glass is slightly convex, and the play of the light on the varying surfaces, seen from the outside, give an added charm to a building.

DIAMOND PANES AND GEOMETRICAL GLAZING

The size of diamond panes and designs of geometrical glazing depend largely on the scale of the building. Our experience is always available, and we shall be pleased to send drawings as required.

ORNAMENTAL, STAINED AND PAINTED GLASS

We employ skilled designers and craftsmen trained in the production of stained and painted glass. Designs can be prepared to suit any class of building, and we are always pleased to send coloured drawings for approval.

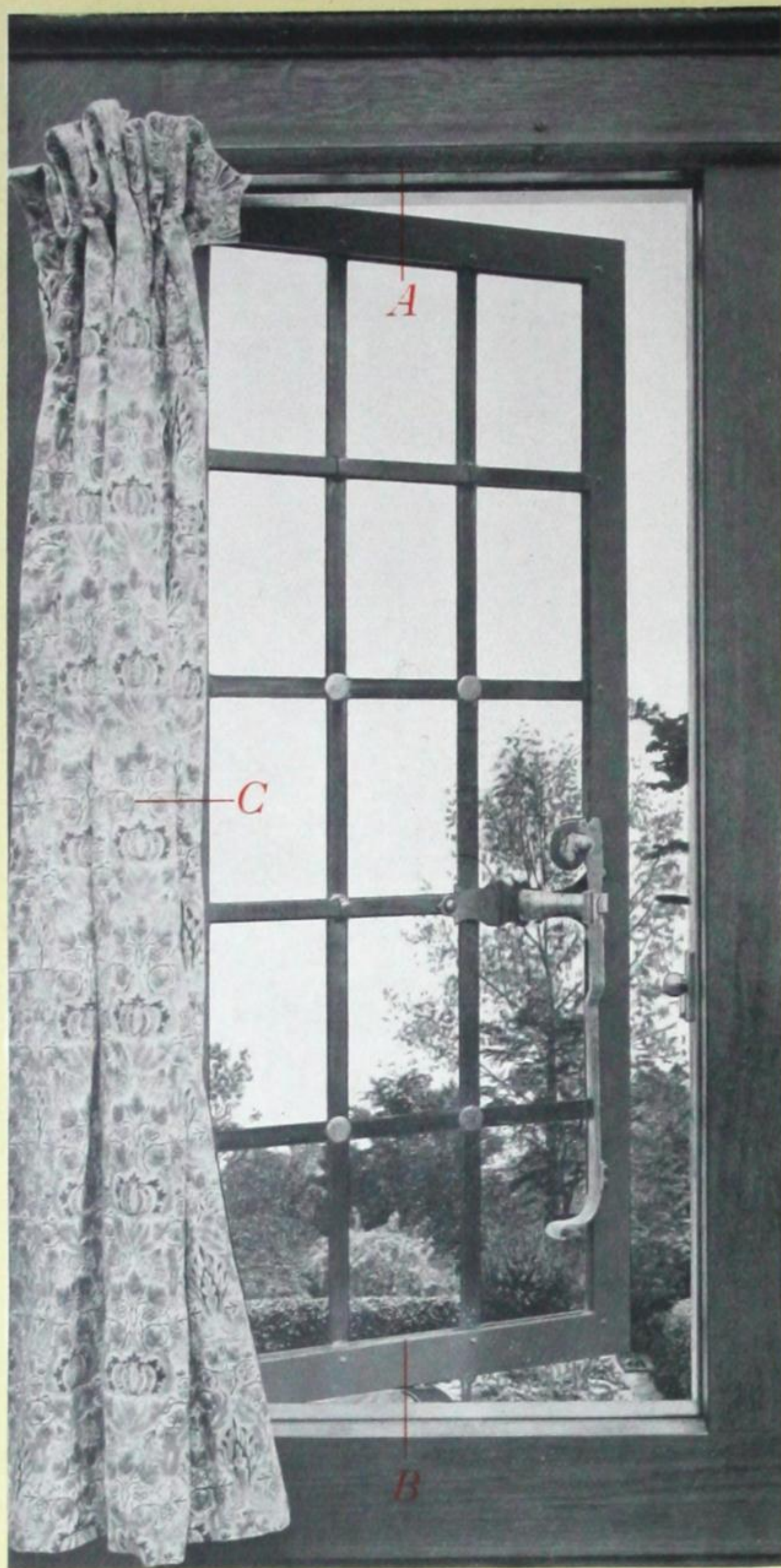


Leaded Glazing



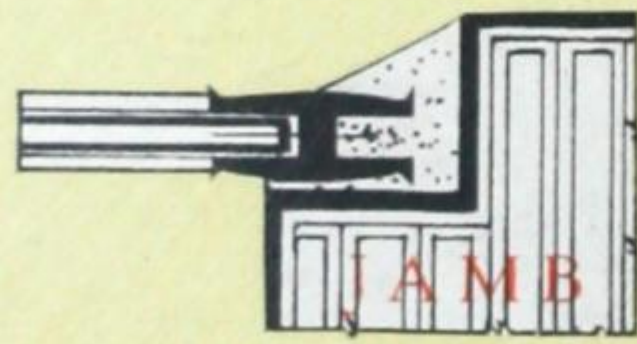
SOUTH WRAXALL MANOR, WILTSHIRE

TUDOR *Casements*



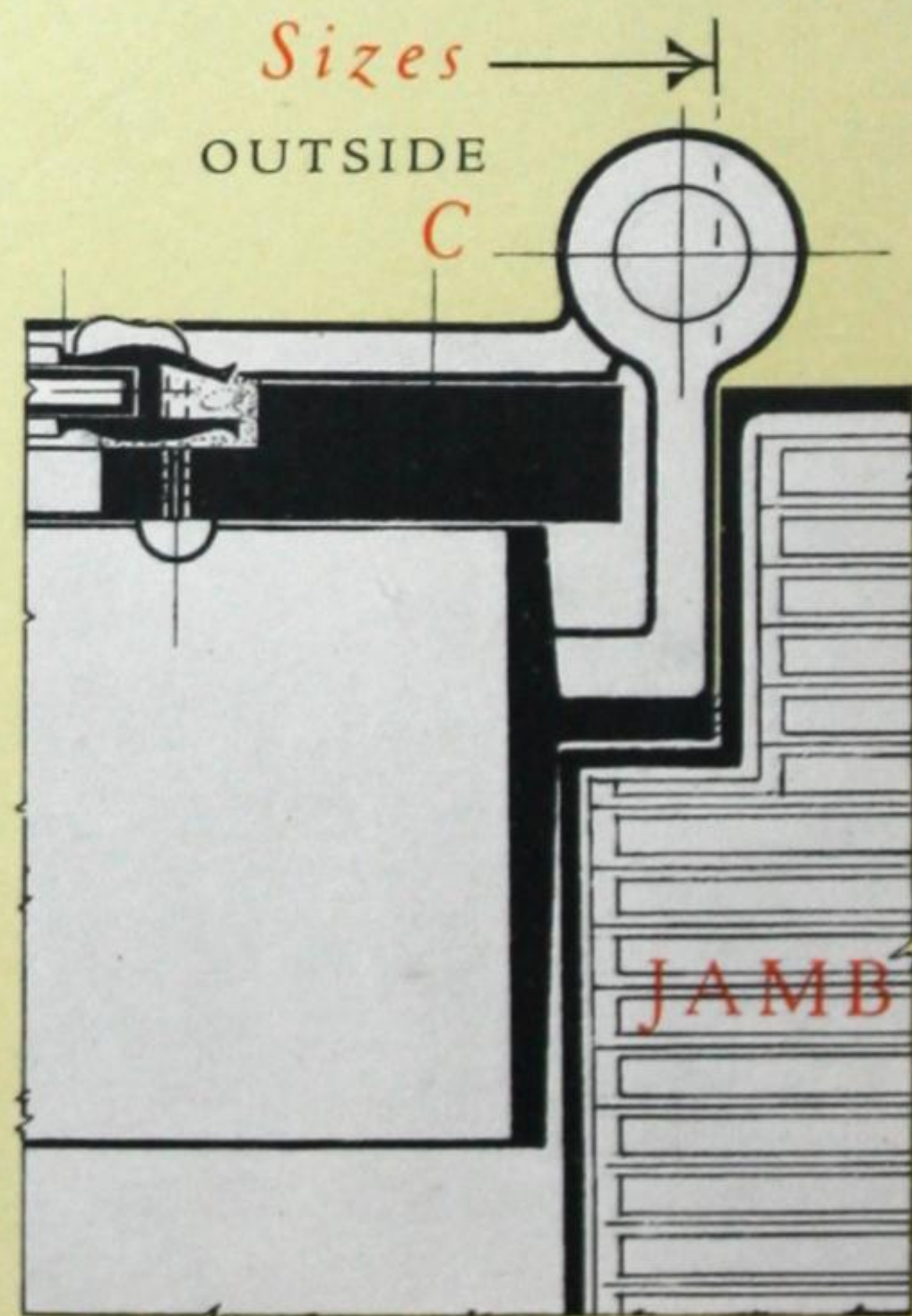
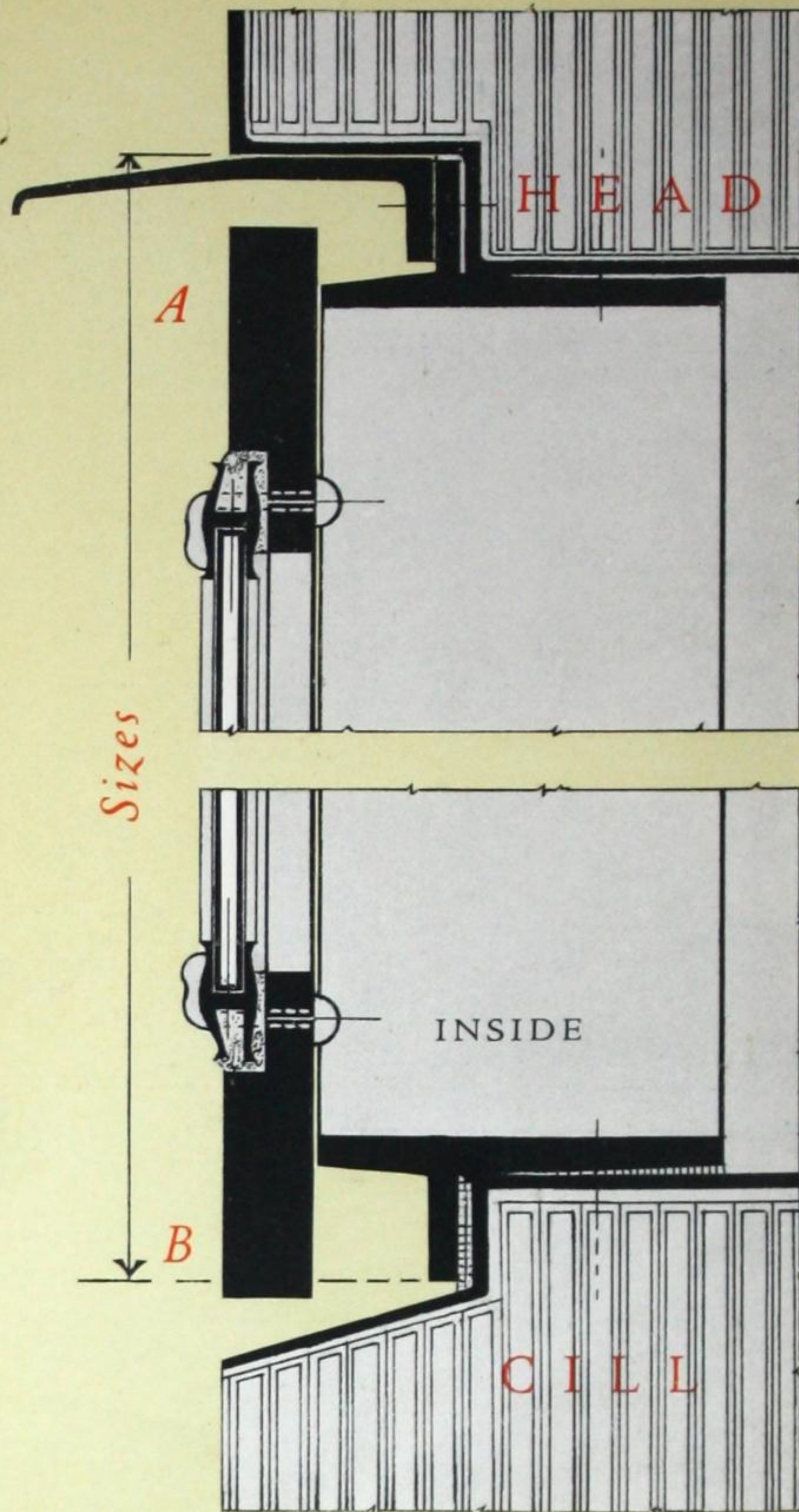
Side hung Casement, glazed with leaded glass and fitted with Latch 1366 and Spring Quadrant.

REBATES for casements should be 1 in. \times $\frac{1}{2}$ in. as shewn, and where it is desired to keep the fixed leaded lights in the same plane as the casements, the rebates for these should be $\frac{1}{2}$ in. \times $\frac{1}{2}$ in. as detail.



Max. height, 4' 0" Max. width, 1' 6"

DETAILS FULL SIZE



& Wrought Iron Fittings

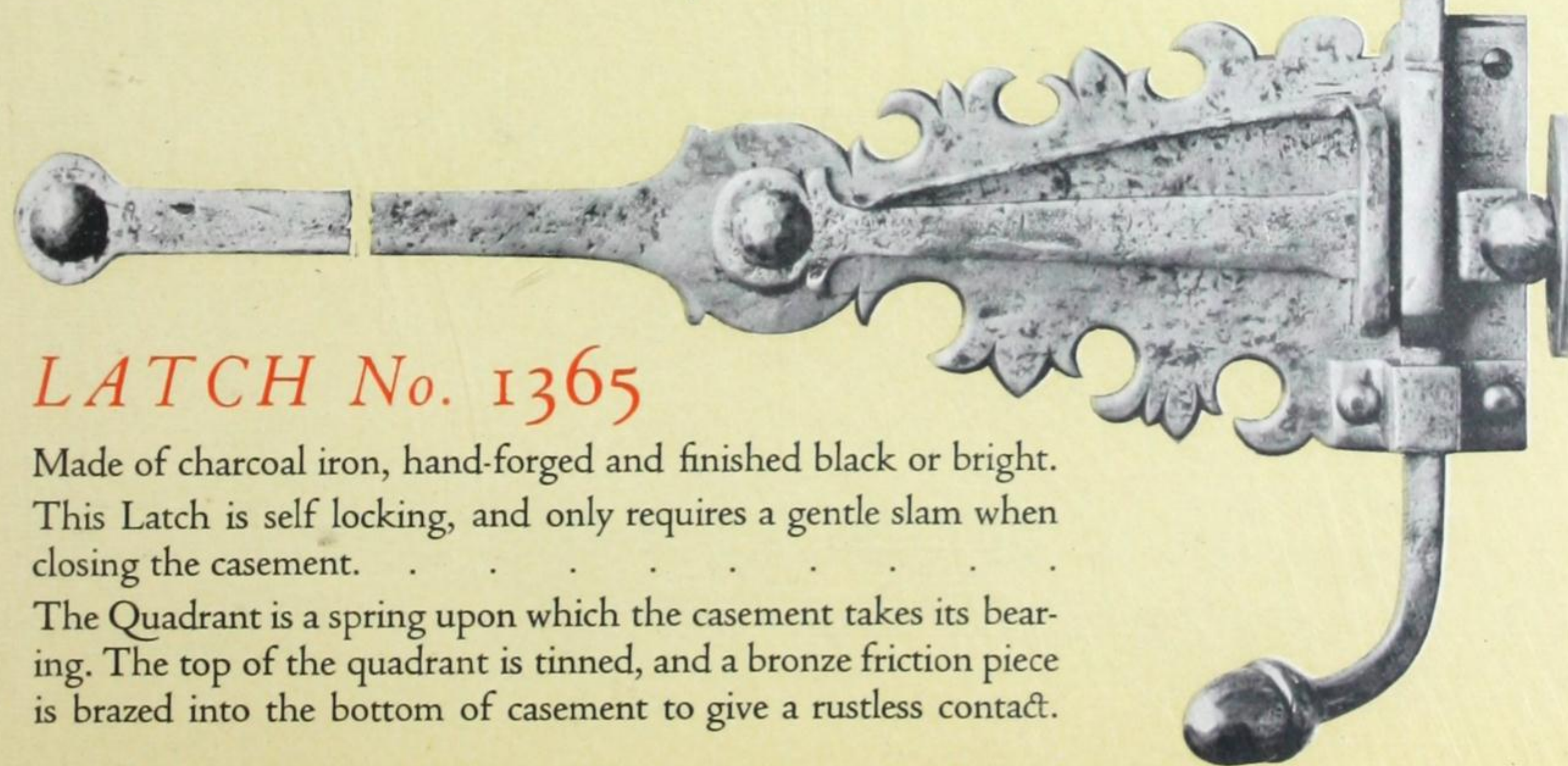


The "TUDOR" Casement

has been designed to meet the requirements of Architects who prefer a flat iron casement for its appearance, and it is recommended as being free from the imperfections usually associated with this type of window.

We supply it in flat section, fitted either with our standard hardware or hand-forged in iron and finished black or armour bright, as illustrated on this and the following two pages. It is a complete casement and frame, perfectly fitted and finished in our workshops, and prepared for setting by screws which pass into the heart of the mullion and jambs.

Those who have experienced the difficulty of plugging the edge of stone or brickwork for hinges and loose strips, will appreciate the solidity of the "Tudor" setting. Flat iron casements are only supplied in conjunction with leaded glass, the leaded lights being soldered and cemented to the casements before leaving the works, and allowed time to set before delivery.



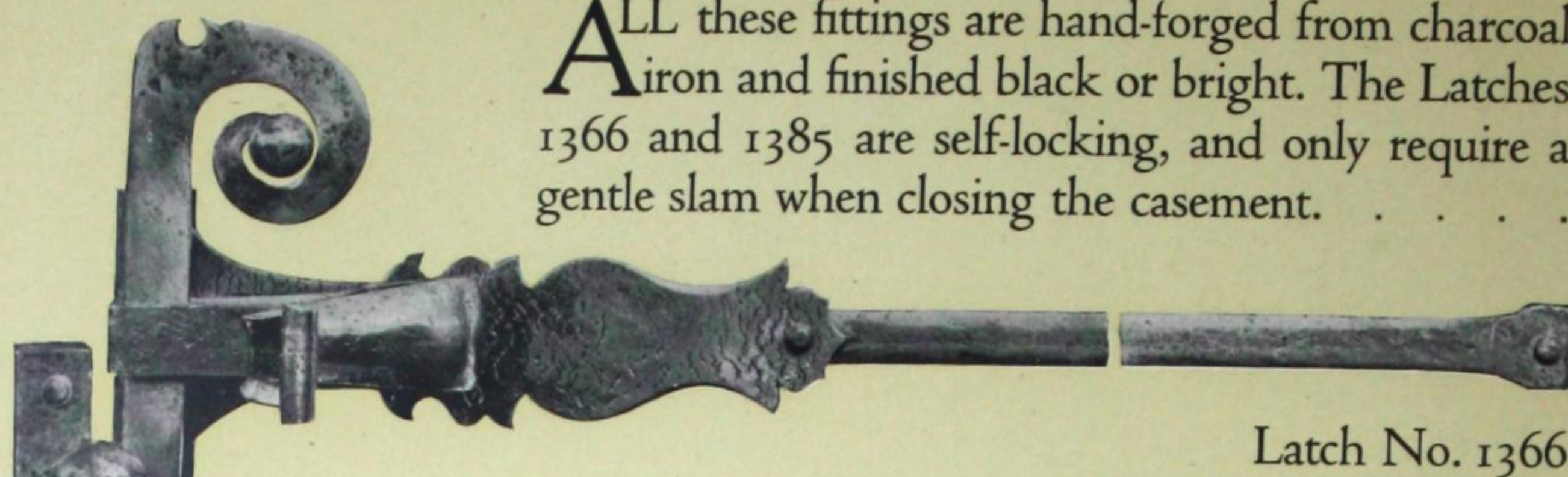
LATCH No. 1365

Made of charcoal iron, hand-forged and finished black or bright. This Latch is self locking, and only requires a gentle slam when closing the casement.

The Quadrant is a spring upon which the casement takes its bearing. The top of the quadrant is tinned, and a bronze friction piece is brazed into the bottom of casement to give a rustless contact.

Wrought Iron Latches

ALL these fittings are hand-forged from charcoal iron and finished black or bright. The Latches 1366 and 1385 are self-locking, and only require a gentle slam when closing the casement.



Latch No. 1366

Fastener
No. 1382
*(from Ludstone
Hall, Salop)*



Fastener
No. 1384



Latch
Fastener
No. 1383

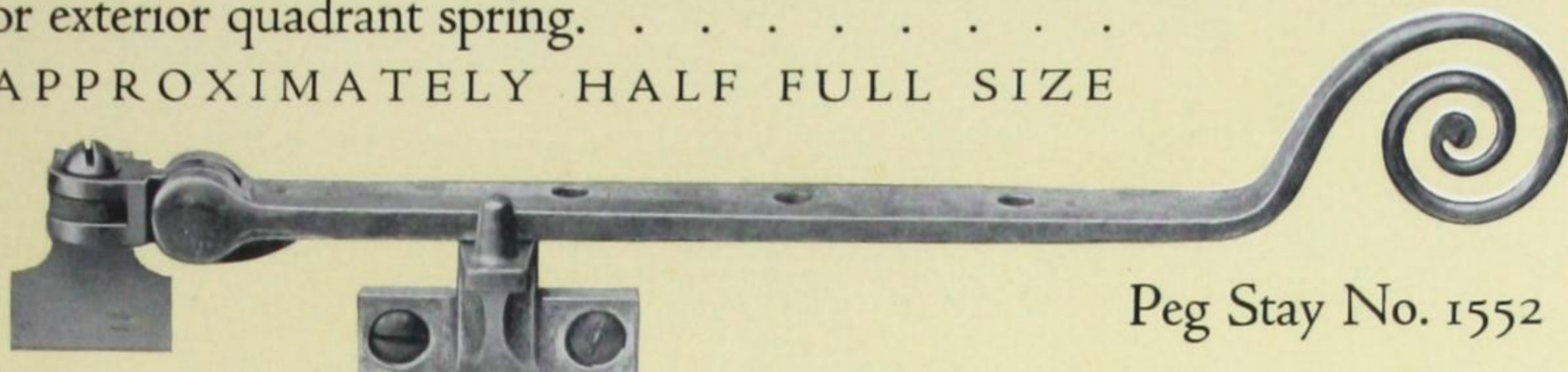


Latch No. 1385

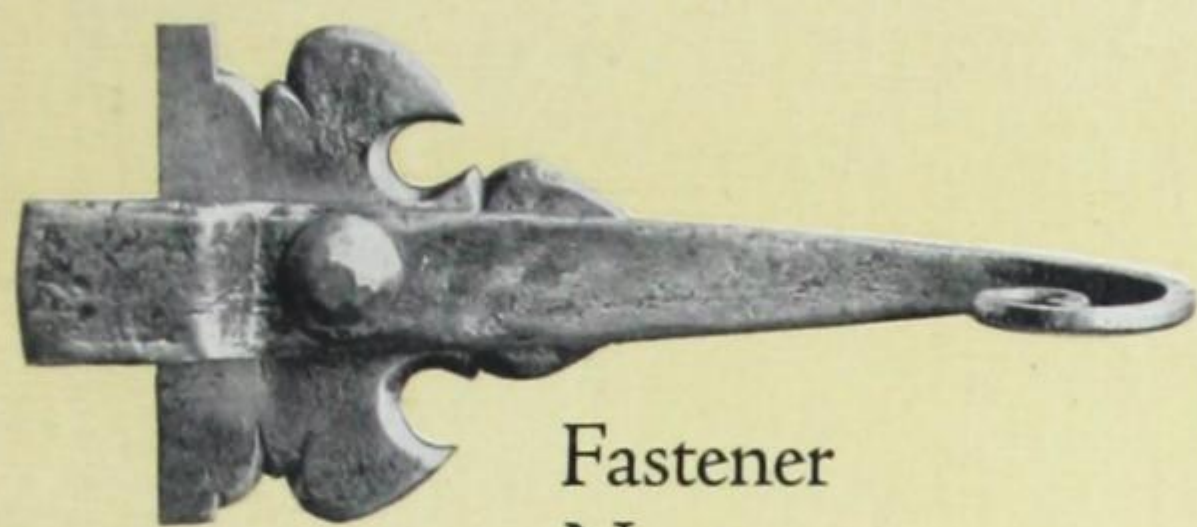
Fasteners & Peg Stays

We recommend the use of hand-forged peg stays
No. 385 or 1552 in conjunction with these latches,
or exterior quadrant spring.

APPROXIMATELY HALF FULL SIZE



Peg Stay No. 1552



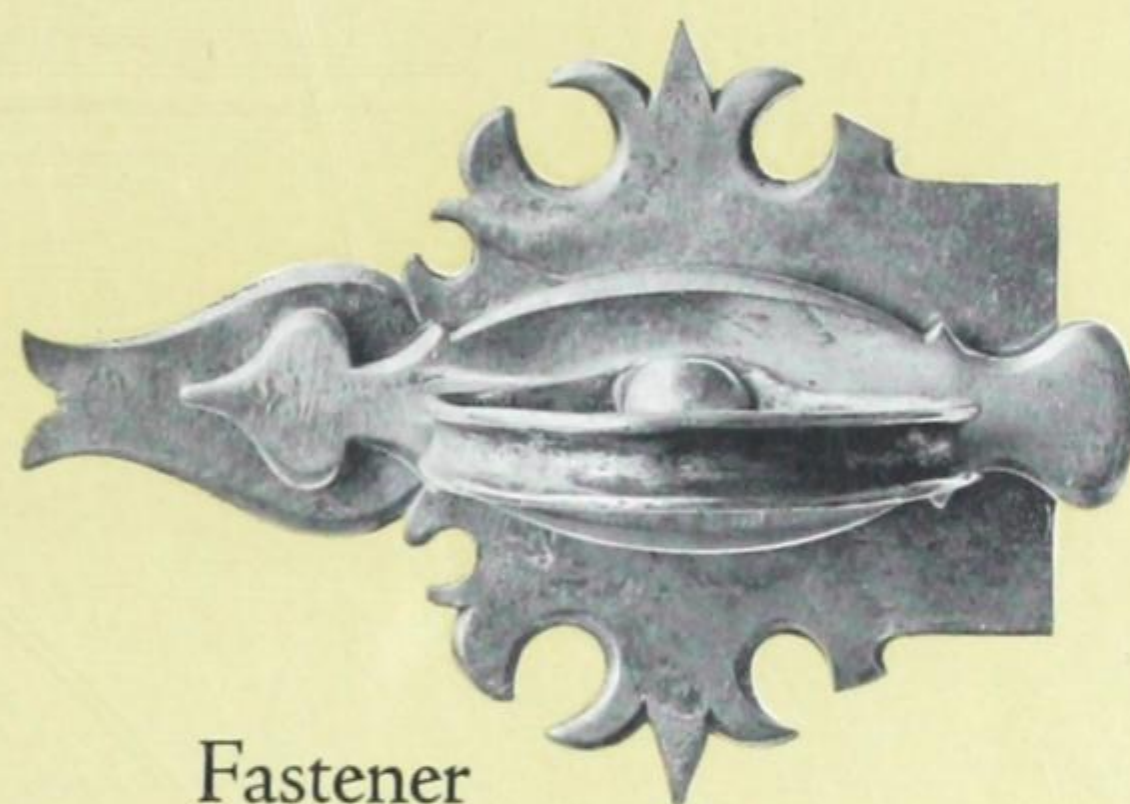
Fastener
No. 209



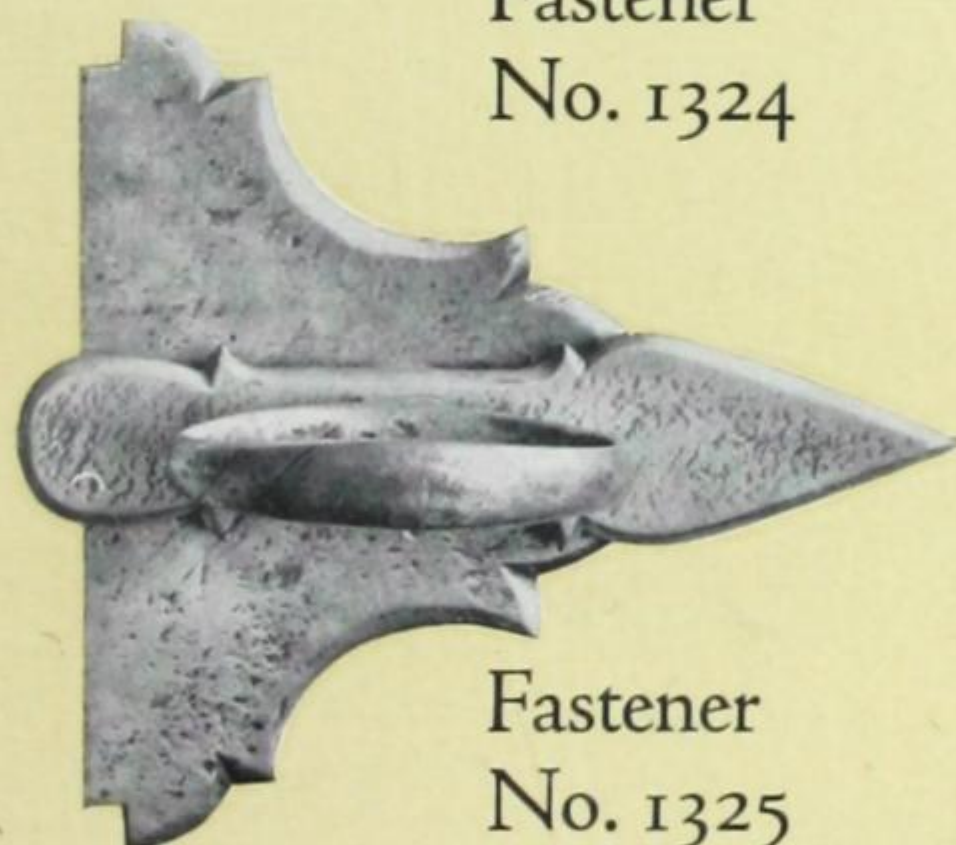
Fastener
No. 1381



Fastener
No. 1324



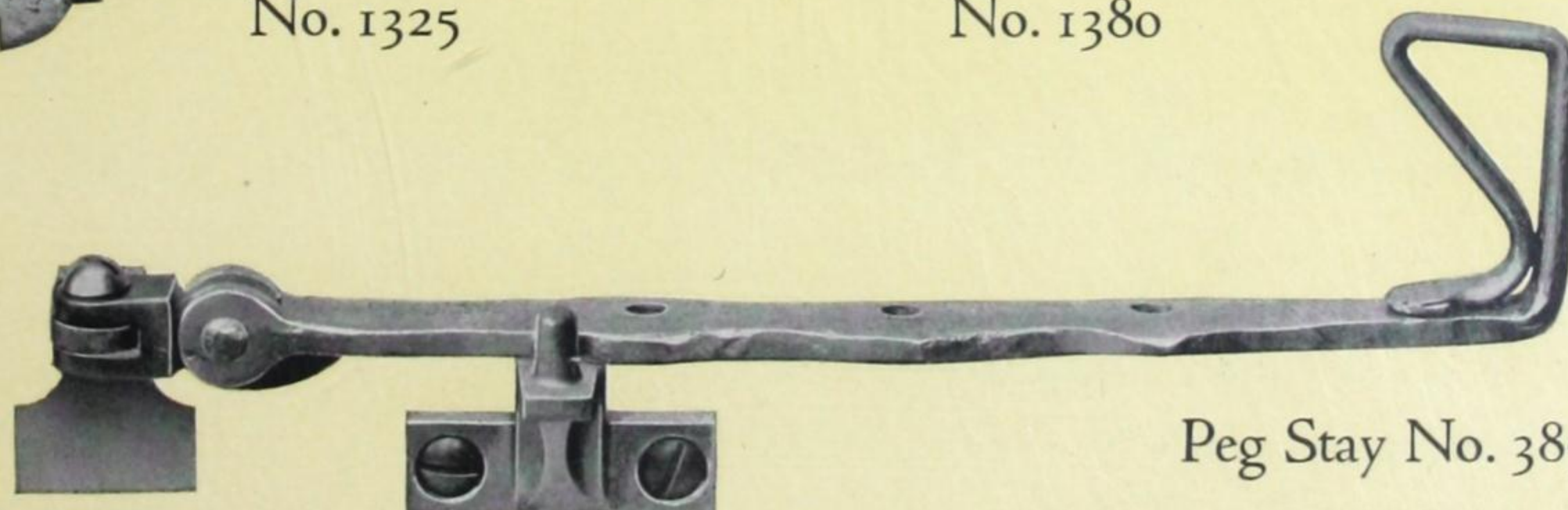
Fastener
No. 1326



Fastener
No. 1325



Fastener
No. 1380



Peg Stay No. 385

THE next three pages illustrate the principal types of gearing which we manufacture, the photographs on each page shewing a representative example. They may be classified as follows:

ROTATING SHAFT GEARING (page 71).

This is particularly suitable for heavy transome lights, and can be applied either singly to each window, or where it is possible to pass the rotating shaft through the intermediate piers, it may be used in moderate lengths for opening and closing several windows at once.

TENSION ROD GEARING (page 72).

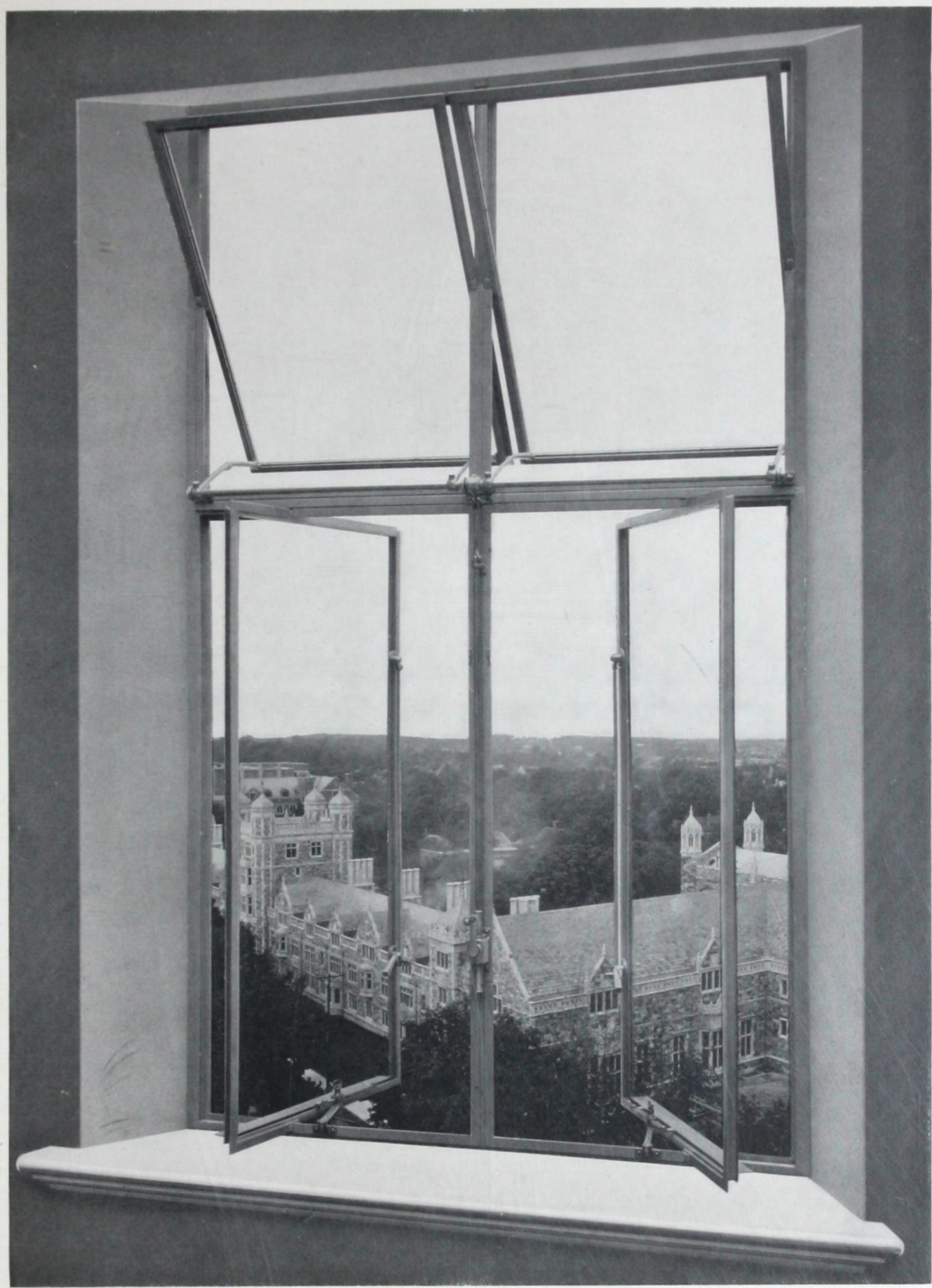
This gear, which was originally devised for use with continuous ranges of windows and skylights, is today the only satisfactory mechanism for regulating these ventilators. It can be supplied with either hand or electric control.

SINGLE TRANSOME GEAR (page 73).

We manufacture a variety of operators for single transome lights, either over doors or window transomes. Three examples are illustrated on this page.

Every detail of gearing is manufactured in our own Works, and we guarantee the efficiency of all gear we supply. We have a wide range of patterns, applicable to every type and size of window. Our technical staff is at the disposal of our customers, and we are always glad to supply detail drawings and estimates of cost, free of charge.

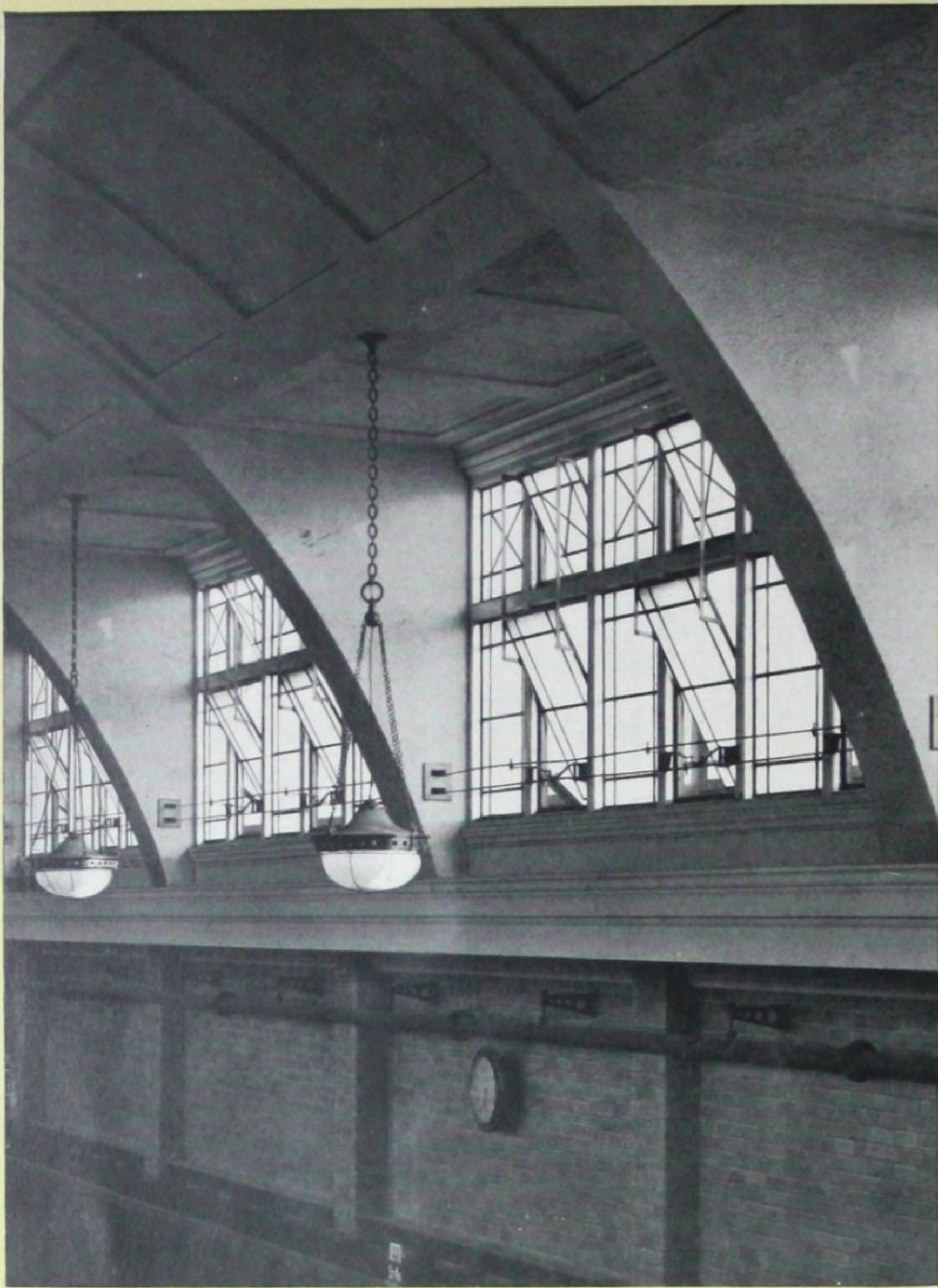
H O P E ' S *G e a r i n g*



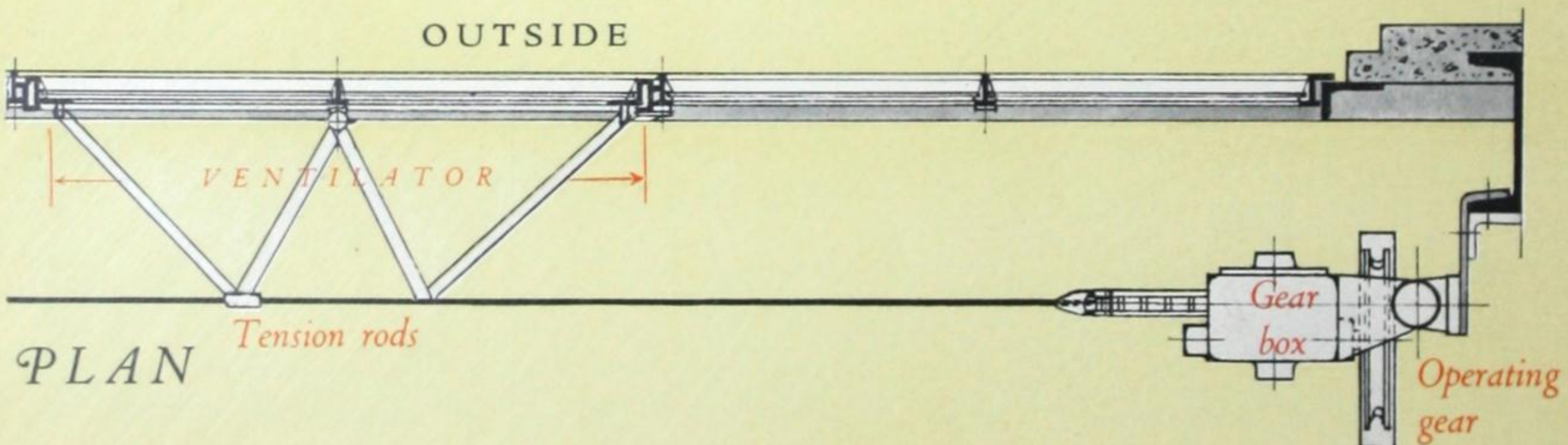
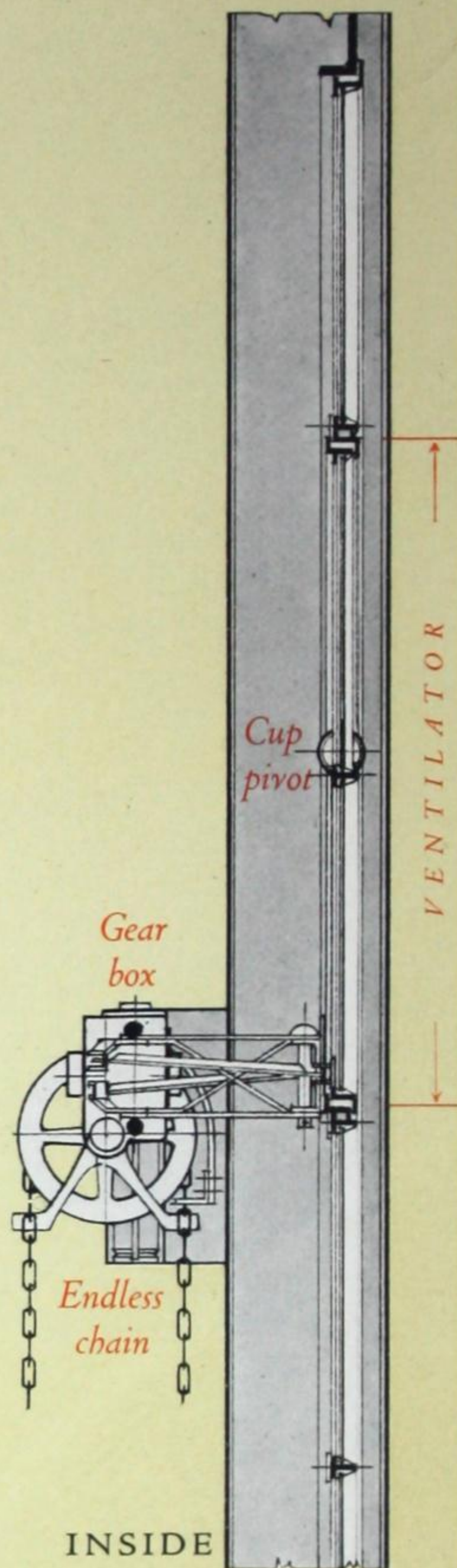
H O P E ' S Improved Rotating Shaft Gear is here shewn applied to a composite window 5 ft. wide. The shaft and jointed arms are of rust-proofed steel, all remaining parts being of solid bronze. This gear is particularly suitable for public rooms, where neatness is essential. Its greatest projection from the face of the window does not exceed $3\frac{1}{2}$ inches.



Tension Rod Gearing



Photograph shewing part of a range of coupled ventilators over 120 feet long, operated from one end by tension rod gearing.



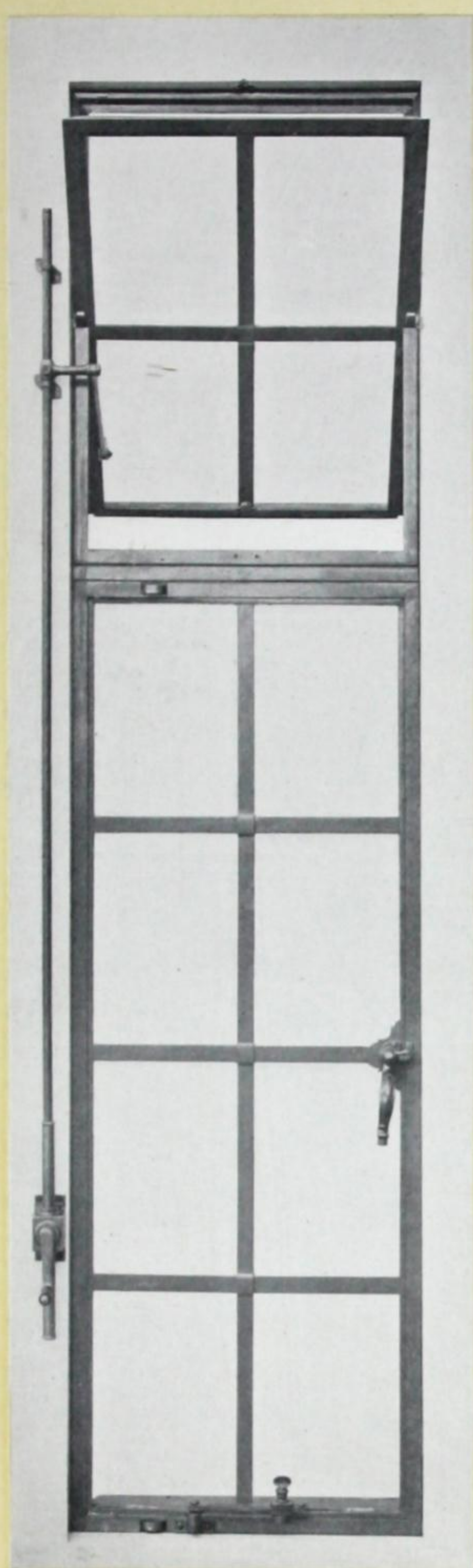
PLAN

HOPE'S NEW TYPE TENSION GEARING, FOR ACTUATING VERY LONG RANGES OF WINDOWS OR SKYLIGHTS, HAS BEEN RE-DESIGNED AND CONSIDERABLY IMPROVED. IT CAN BE WORKED EITHER BY HAND CHAIN, AS SHEWN IN THIS ILLUSTRATION, OR WITH AN ELECTRIC MOTOR AND AUTOMATIC SWITCH. IT PROVIDES UNIFORM, RELIABLE AND SPEEDY CONTROL OF VENTILATION IN WORKSHOPS, POWER STATIONS AND SIMILAR BUILDINGS WITH THE MINIMUM OF ATTENTION, AND MARKS A GREAT ADVANCE UPON OLD METHODS OF OPERATION.

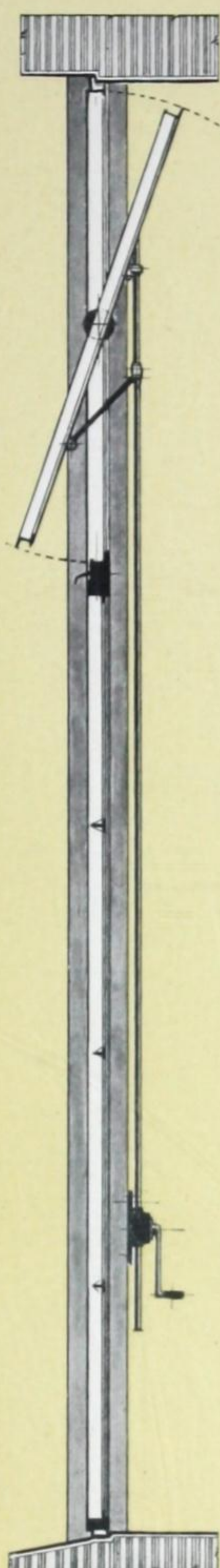


SECTION

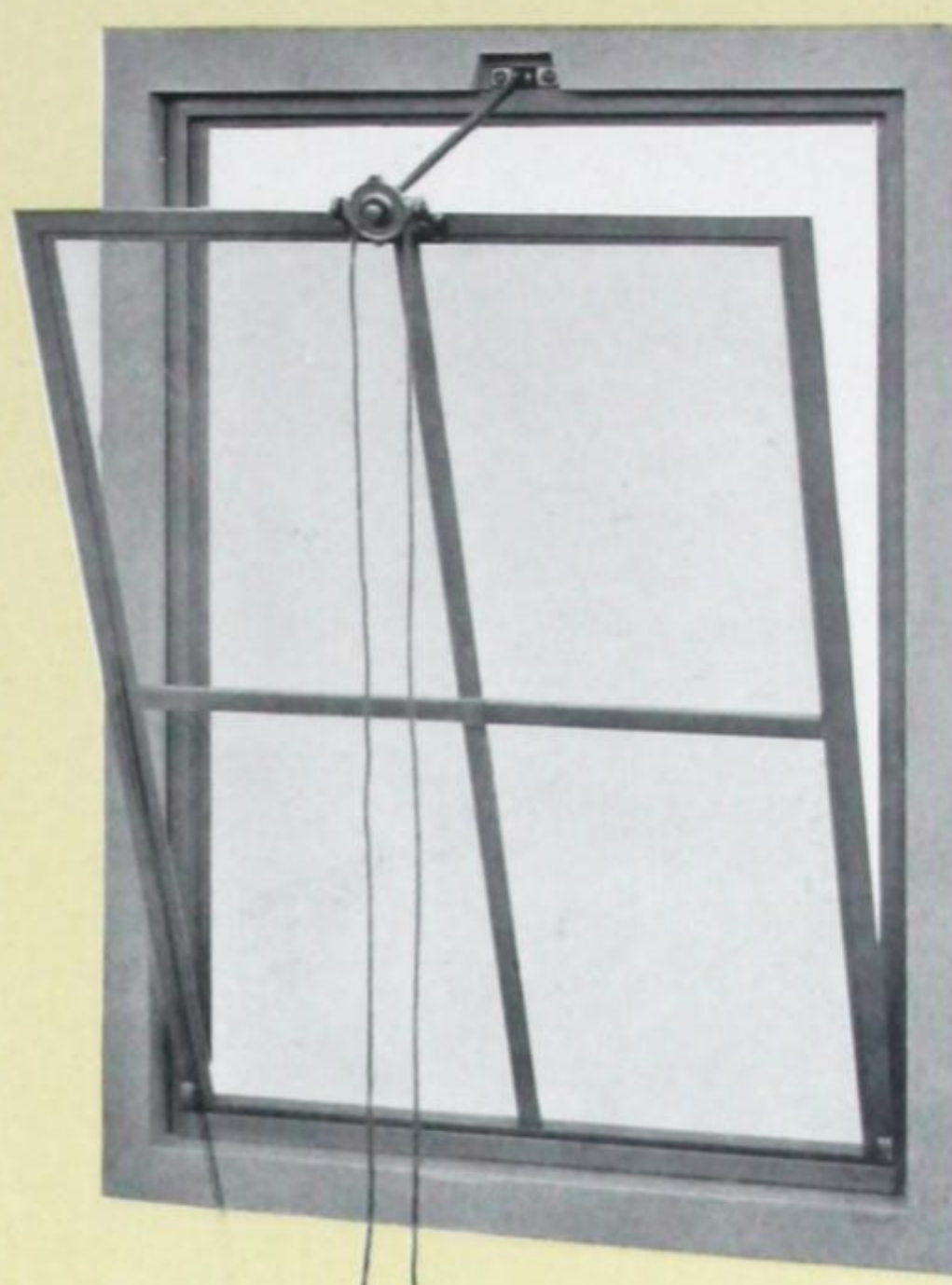
Ⓜ *Transome Light Gearing* Ⓜ



Elevation

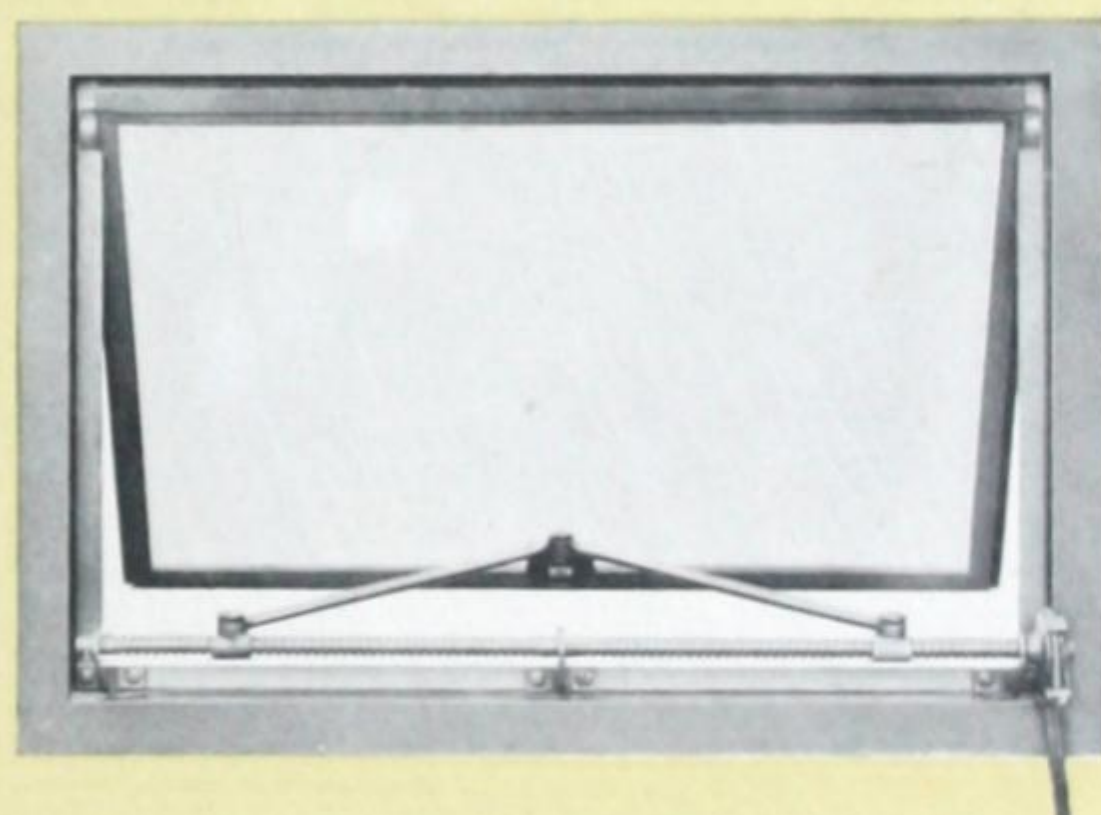


Section



No. 1641 **SCREW OPENER.**

Holds the casement securely in any position, and is supplied in two sizes for use with top, centre and bottom hung ventilators.



HOPE'S LINK GEAR

This gear is specially suitable for single lights or lights in pairs, hung at top, bottom, or to swing. The attachment being to the side of the light, this pattern should not be used for large or heavy lights. When ordering state length of rod required and send full size details of head, jambs and cill.

No. 1358 **TWIN-SCREW OPENER.**

Suitable for wide casements, hung at top or bottom, or to swing. The maximum opening is two-fifths of width of casement, and the fittings do not project more than 2 inches from inside face of frame.

HOPE'S *Standard Windows*

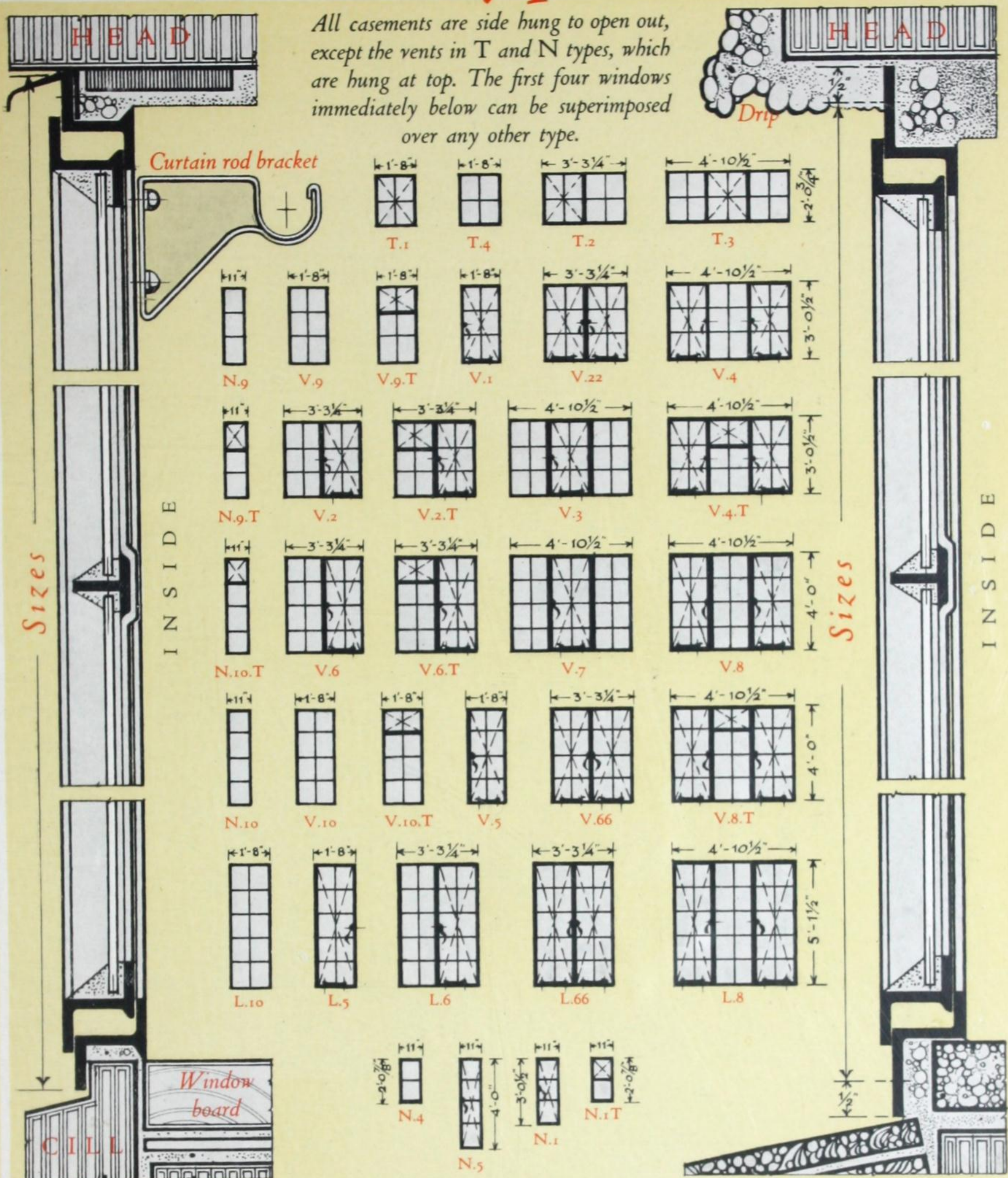


Interior view of a standard V-2 type, built in brickwork, with internal plaster finish

THESE windows are made in standard sizes to meet the requirements of a wide range of dwelling-houses. A large stock is kept, insuring immediate delivery for building-in. They are adaptable to brick, stone, concrete, or wood construction; they are complete with substantial hinges, fittings and curtain brackets, and are painted two coats of special elastic enamel, baked on. There is no expense attached to the use of these windows beyond the cost of glazing and one coat of paint to cover the putty. They are practical, pleasant in use, and weatherproof; they are cheaper than wood and require no repairs.

FULLY ILLUSTRATED CATALOGUE FORWARDED ON APPLICATION

Standard Types & Sizes



ERRATA

T.1, T.4, T.2 and T.3 on top line, and N.4 and N.1.T on bottom line, are now 2' 1 1/8" high.
L.10, L.5, L.6, L.66 and L.8 should now read V.15, V.11, V.12, V.13 and V.14, and are 4' 11 1/4" high.

Standard French Windows



HOPE'S standard French Windows type D.4, opening out, with low panels. The panes are the same size as in our ordinary standard windows, so that with a proper adjustment of cill levels horizontal bars will range with each other. These windows are complete in every respect and are held in stock for immediate delivery. A Specification is given on opposite page.



to open outwards



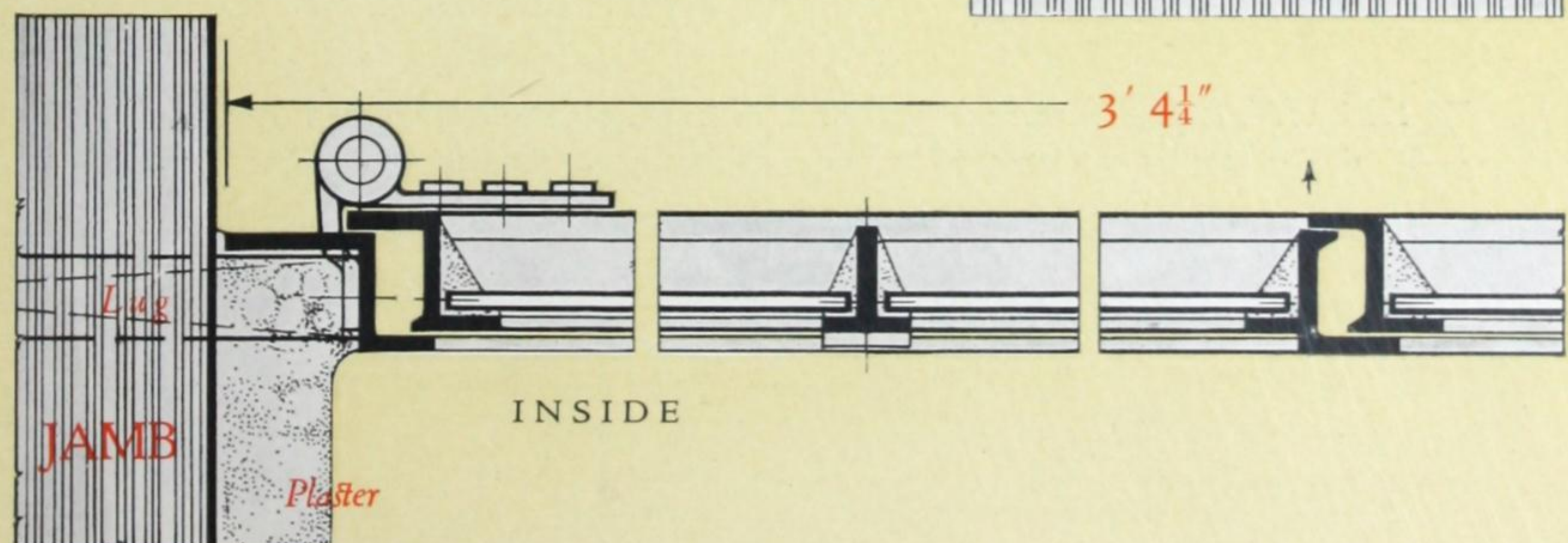
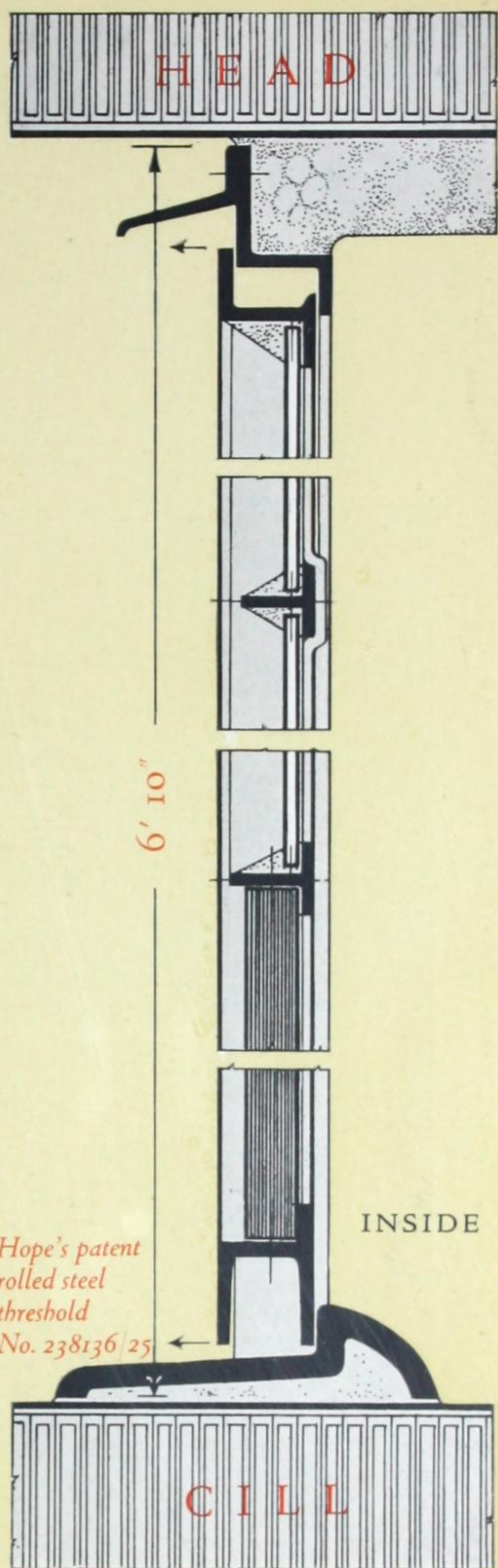
Specification

H OPE'S standard French Windows, type D.4, as illustrated on these two pages, are 6 ft. 10 ins. high by 3 ft. 4½ ins. wide, which is one inch wider than our ordinary standard windows, the frame having a half inch wider flange for extra strength.

Made of rolled steel to the sections shewn, with all corners welded solid and \perp bars jointed on our Lok'd-Bar principle. A rust-proofed rolled steel threshold (Patent No. 238136/25) is welded to jambs, forming one unit which can easily be set in place.

Each leaf is hung on three steel hinges with solid brass pintles, and the right hand leaf is fitted with a solid bronze Cremorne bolt which shoots into bronze sockets in the frame at top and bottom, and also engages the left hand leaf. The left hand leaf is fitted with two bronze bolts, thus allowing the right hand leaf to be operated independently of the other, and is both safe and convenient in use.

These windows are specially suitable for living rooms or porches, and to open either on to balconies, verandahs or gardens. . .



Application of Curtains



Stone mullion window, fitted with heavy curtain runners attached by brackets to the soffit, and light curtain runners fixed to brackets plugged to the stone head.

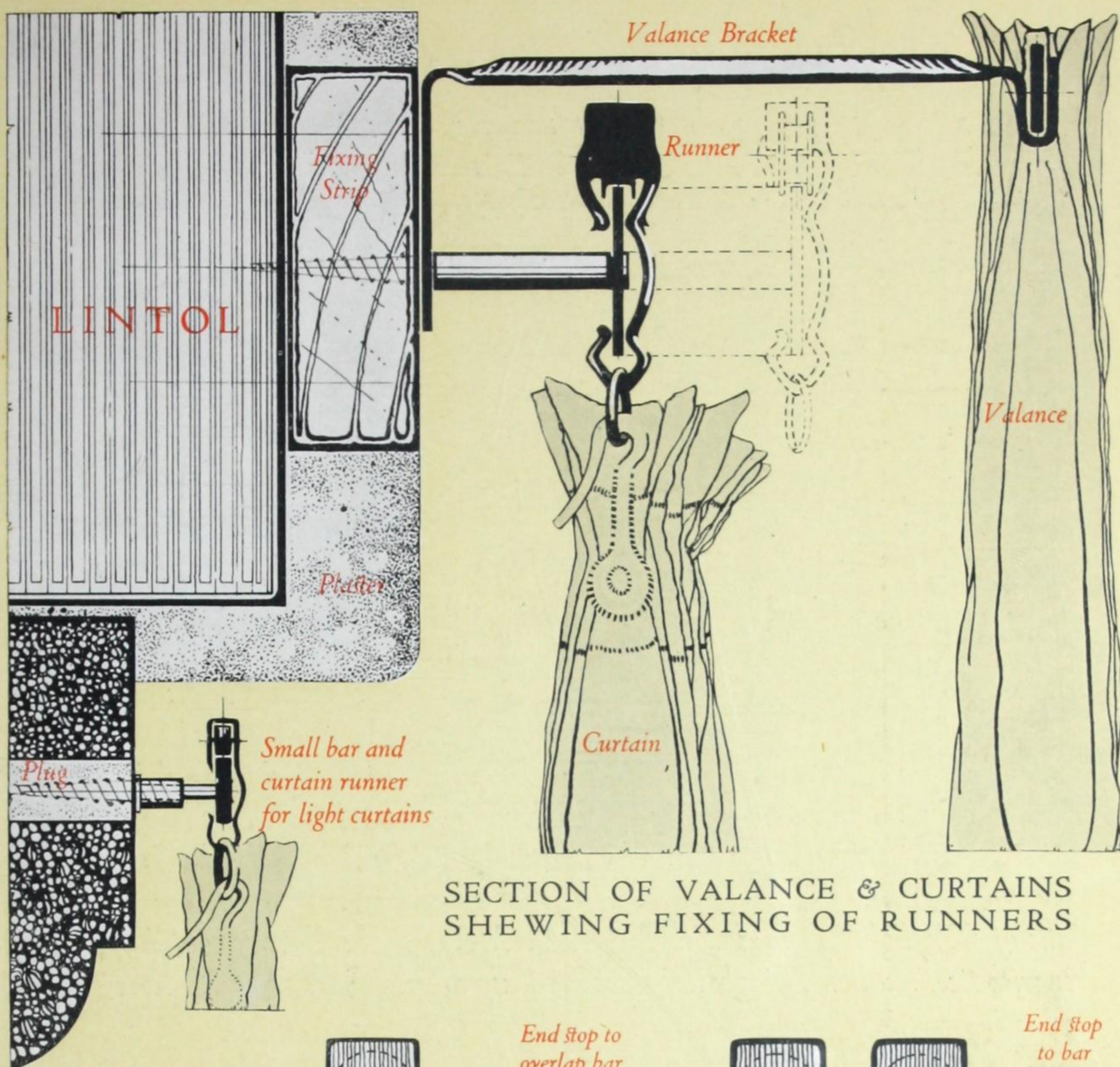
ADEQUATE preparation for curtains is of importance to a house owner, and a good deal of trouble can be saved by due consideration at the time of building. We recommend the flat bar roller type, which work perfectly in flat or bay windows and do not require cords.

The brackets can be fixed either on the soffit, as shewn in the above photograph, or to the face of the window head, as shewn on the detail.

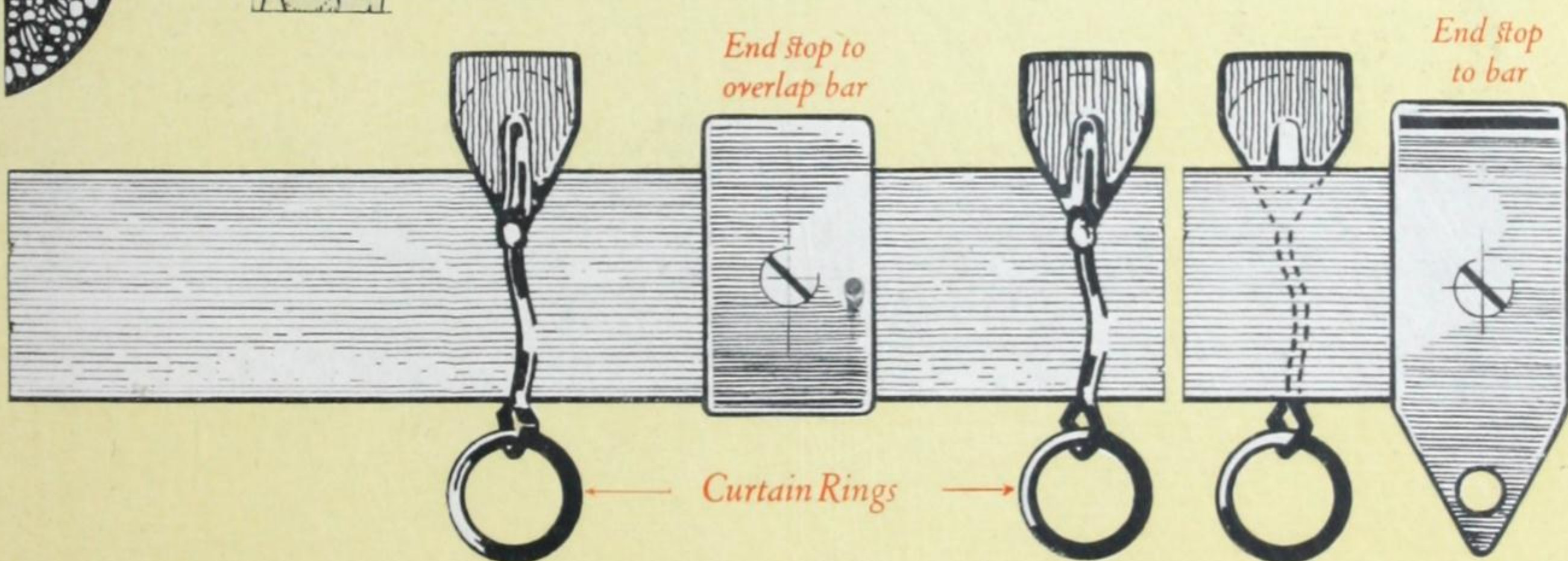
Where it is possible to fix direct to stonework, suitable plugs can be employed, but where it is necessary to fix to a plastered wall, a strip of wood about $2\frac{1}{2}$ in. \times $\frac{3}{4}$ in. should be provided, securely fixed in its place by the building contractor.



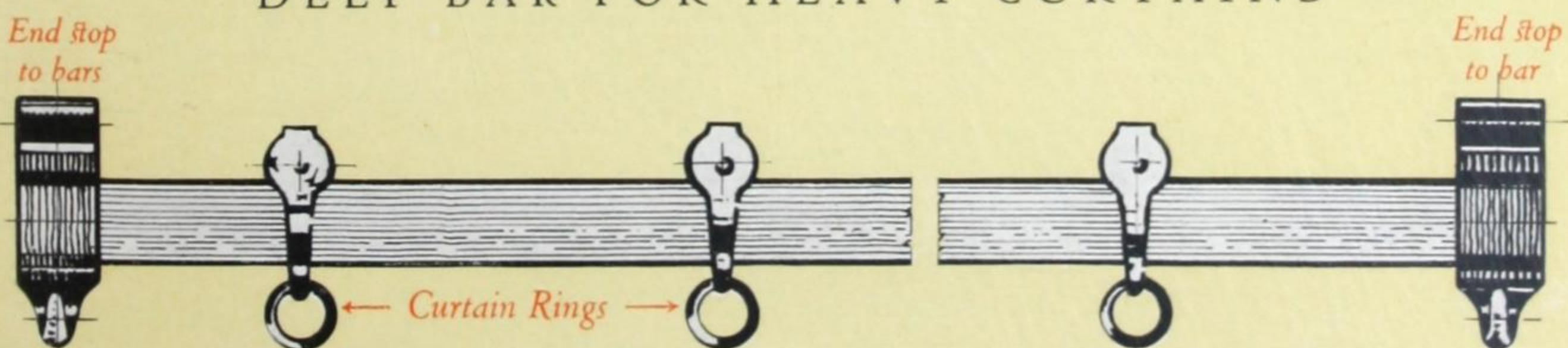
Full Size Details



SECTION OF VALANCE & CURTAINS
SHEWING FIXING OF RUNNERS



DEEP BAR FOR HEAVY CURTAINS



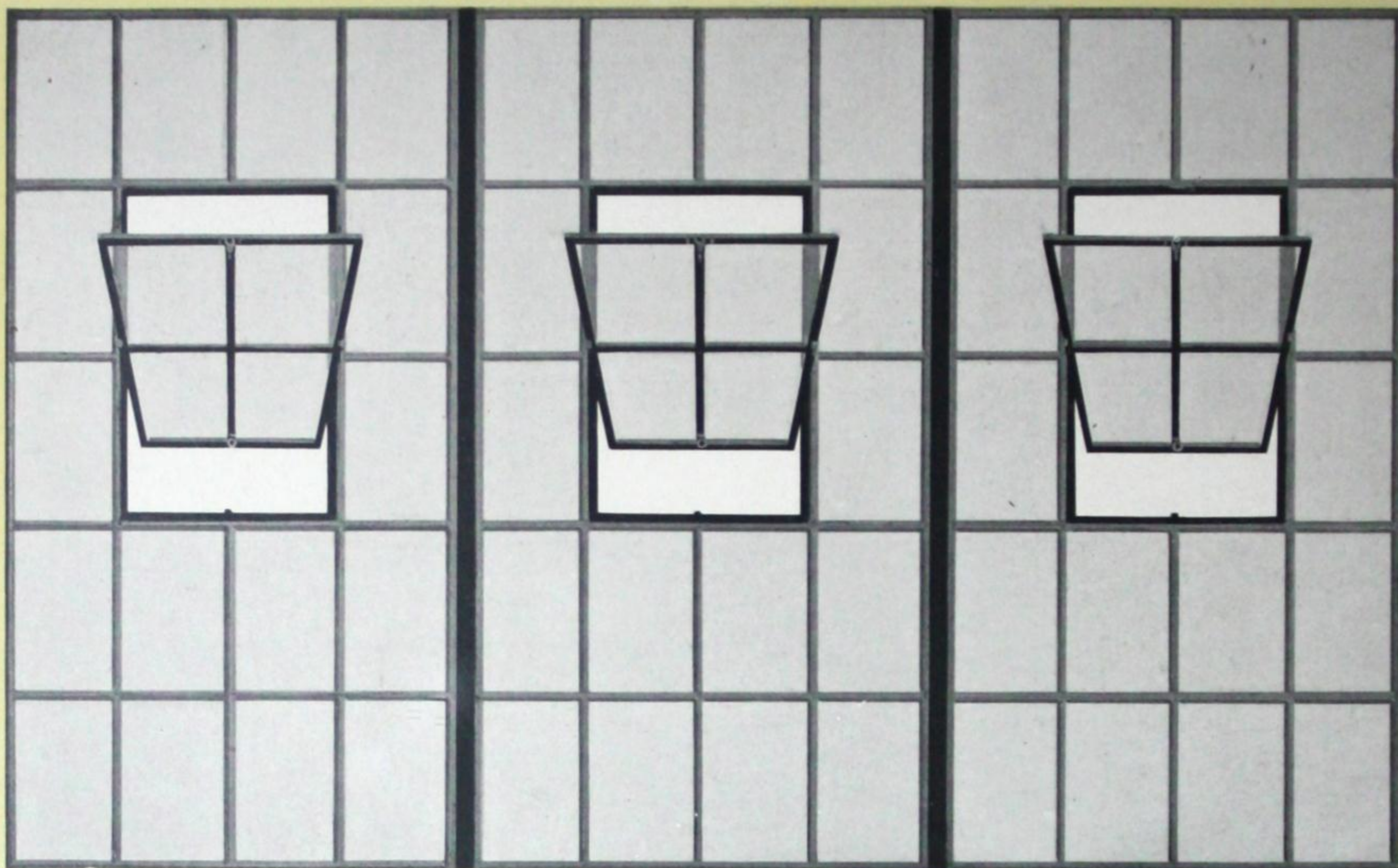
SMALL BAR FOR LIGHT CURTAINS



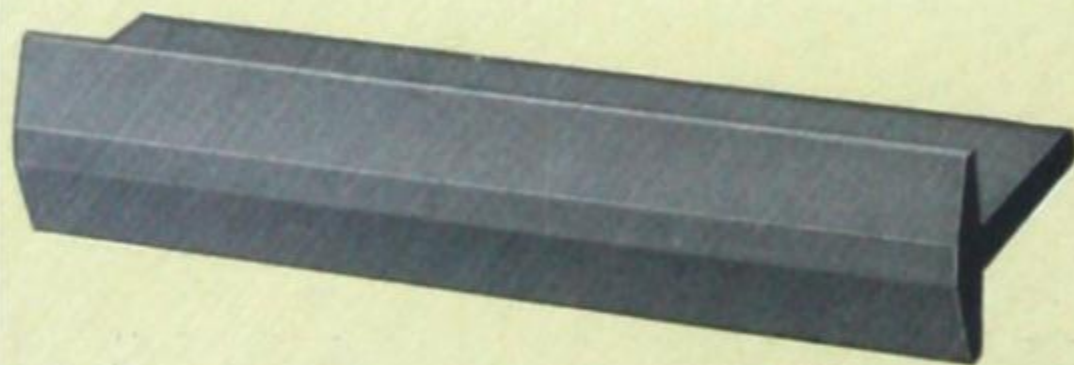
HOPE'S



LOK'D-BAR STEEL SASHES COMBINATION OF UNITS



"Walls of Daylight" formed with Hope's Lok'd-Bar steel sashes by coupling units together with steel mullions. Single units are made up to 100 square feet with perfect safety.



British Patent 128067/1918
U.S.A. „ 1354821/1920



*View of vertical and horizontal astragals
before being threaded and closed. . .*

*View of joint after being
hydraulically closed. . .*

A separate catalogue, which fully illustrates and describes Hope's Patent Lok'd-Bar Sashes, will be forwarded upon request.



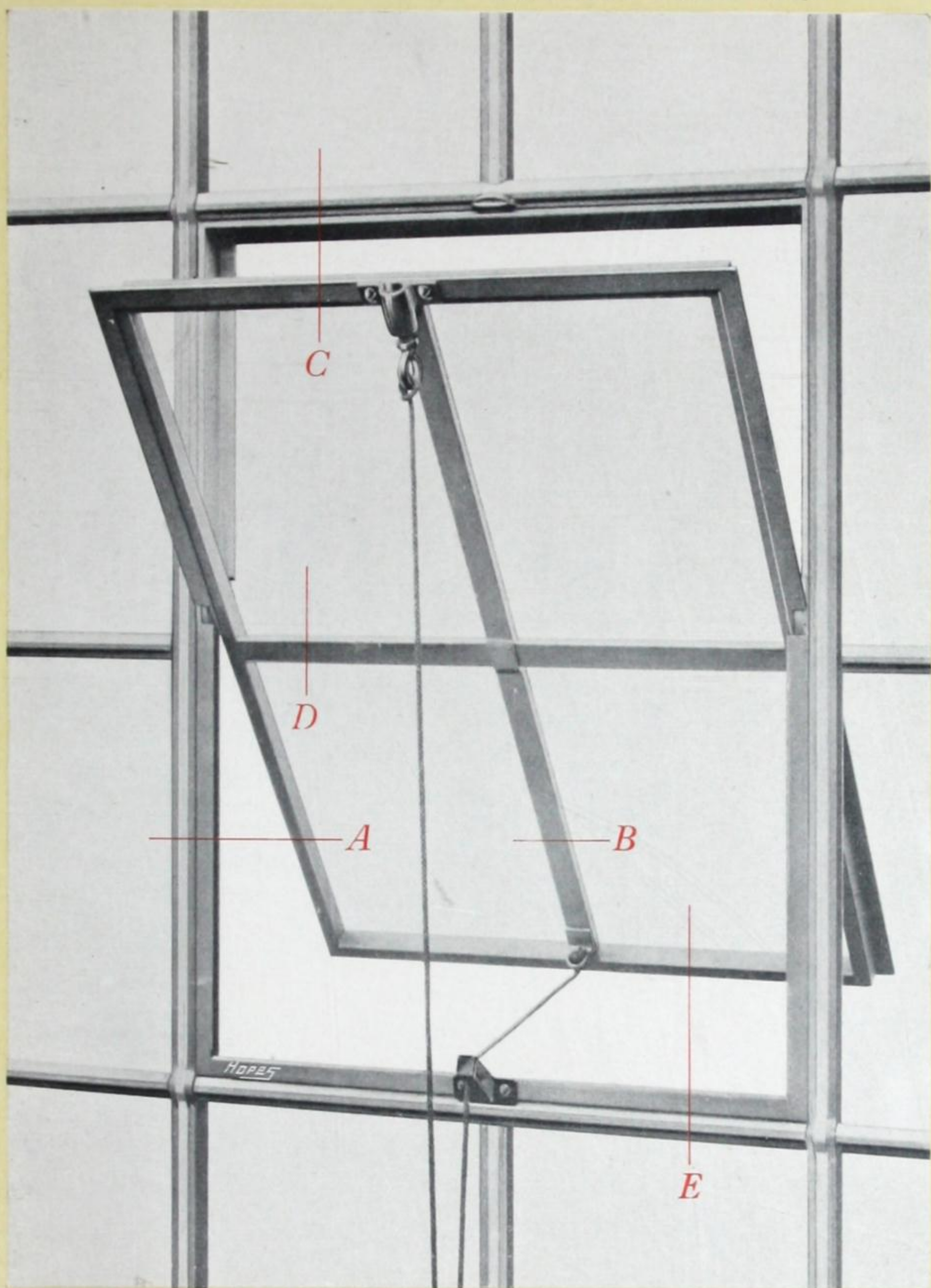
HOPE'S



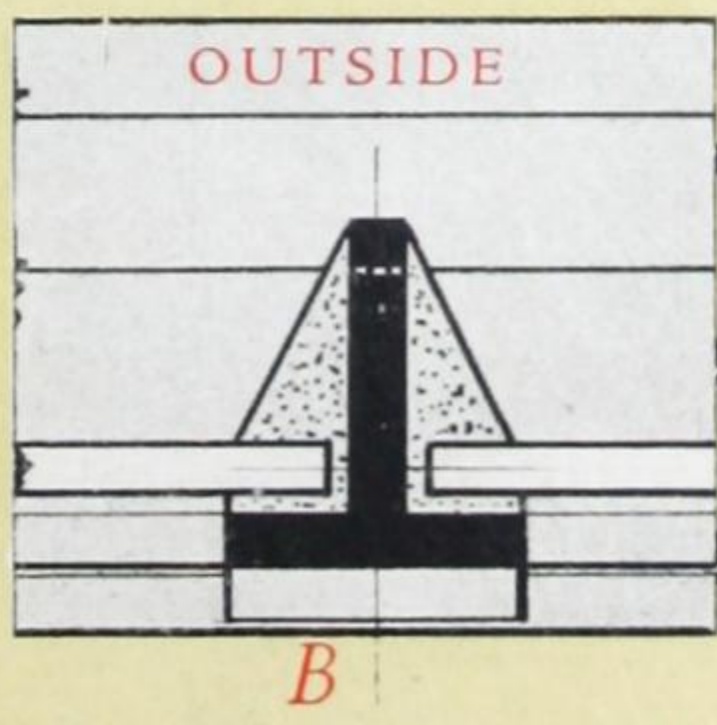
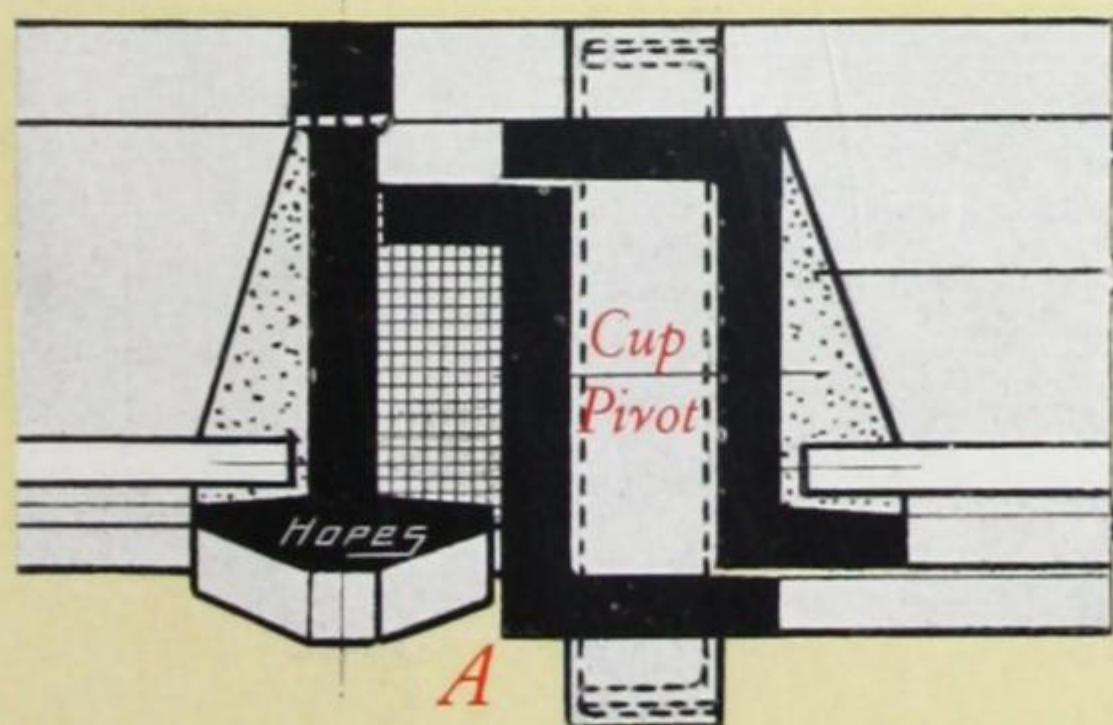
LOK'D-BAR STEEL SASHES

HORIZONTALLY PIVOTTED VENTILATORS

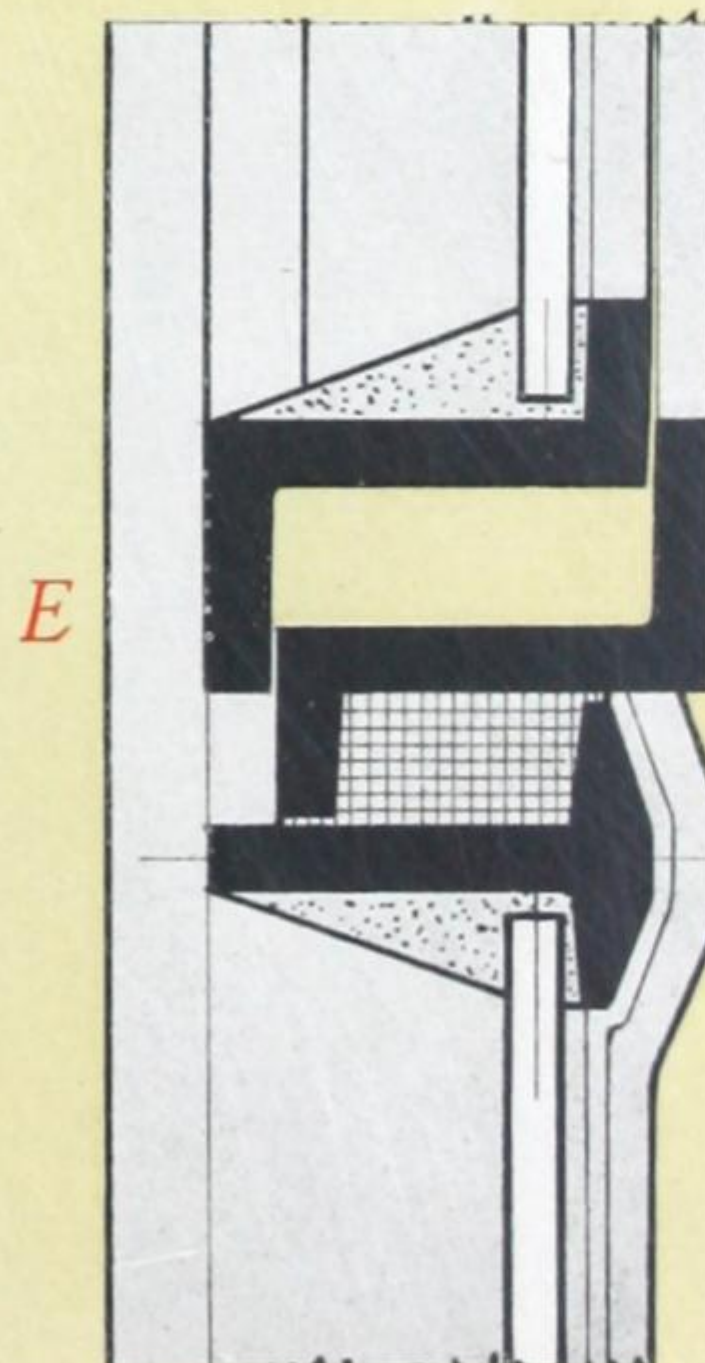
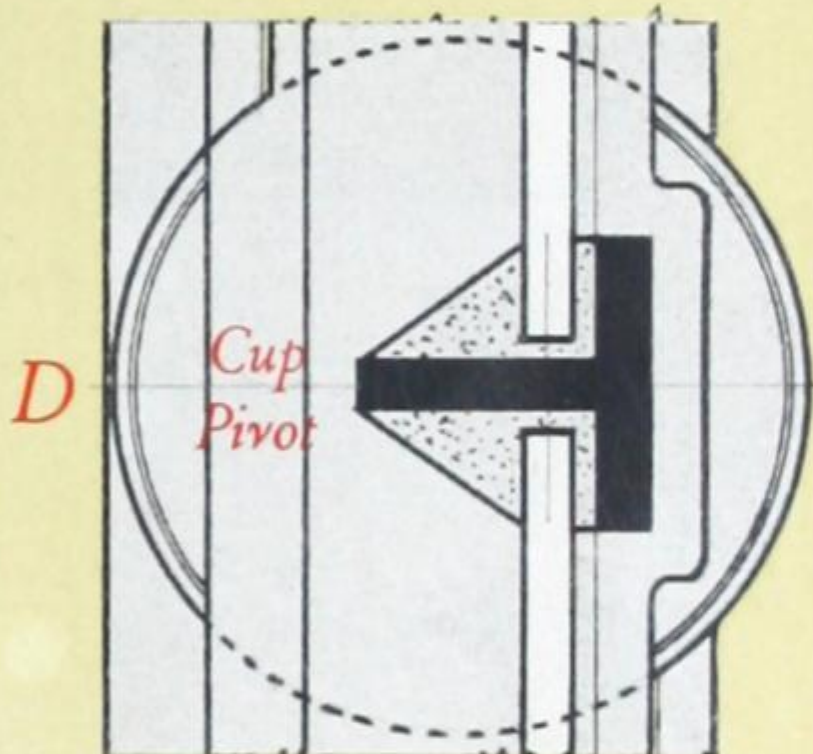
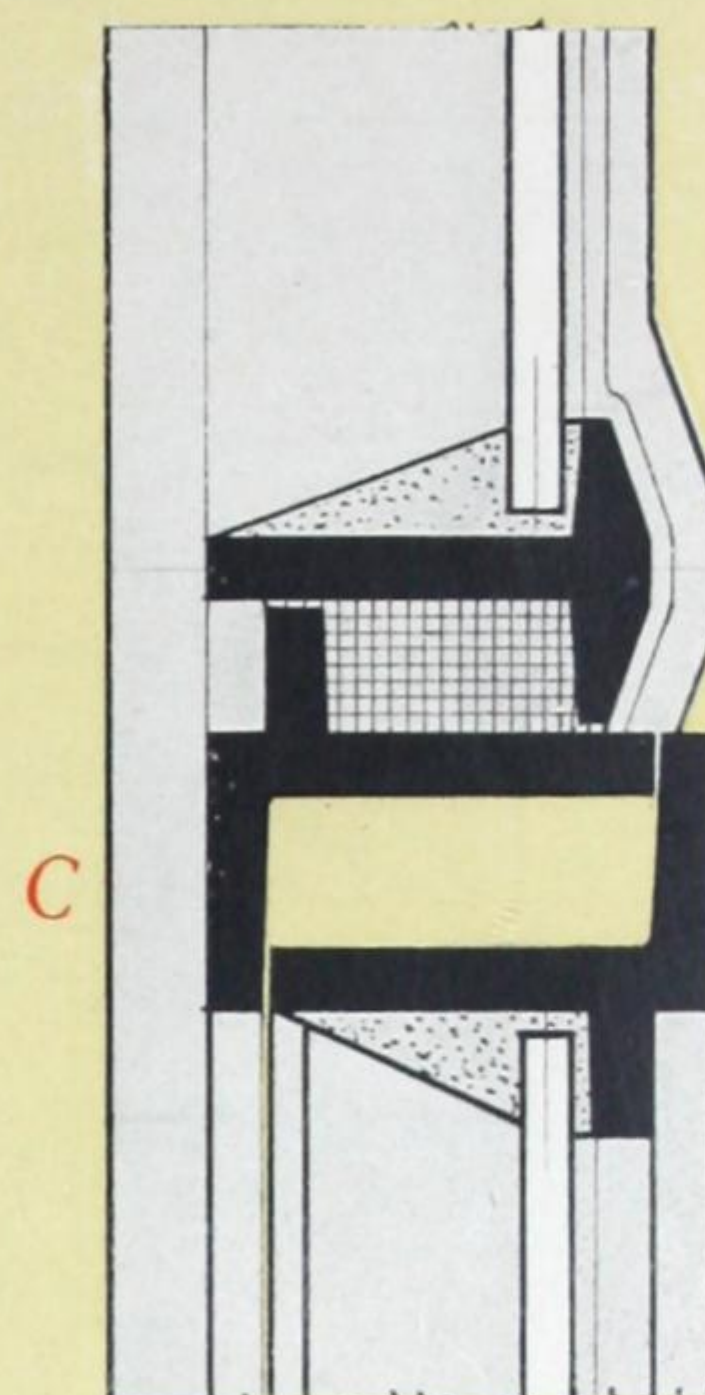
DETAILS FULL SIZE



Horizontally pivotted ventilator, hung on Hope's patent cup pivots (British Patent No. 117718, December, 1917) and fitted with spring catch, cord eye and pulley.



PLAN THROUGH LOWER HALF OF VENTILATOR



VERTICAL SECTION

HOPE'S *Glass Roofing*

Exclusive Features of Construction

The glass has a good bearing on the bar, and is not supported on its extreme edges.

There is ample provision for expansion and contraction.

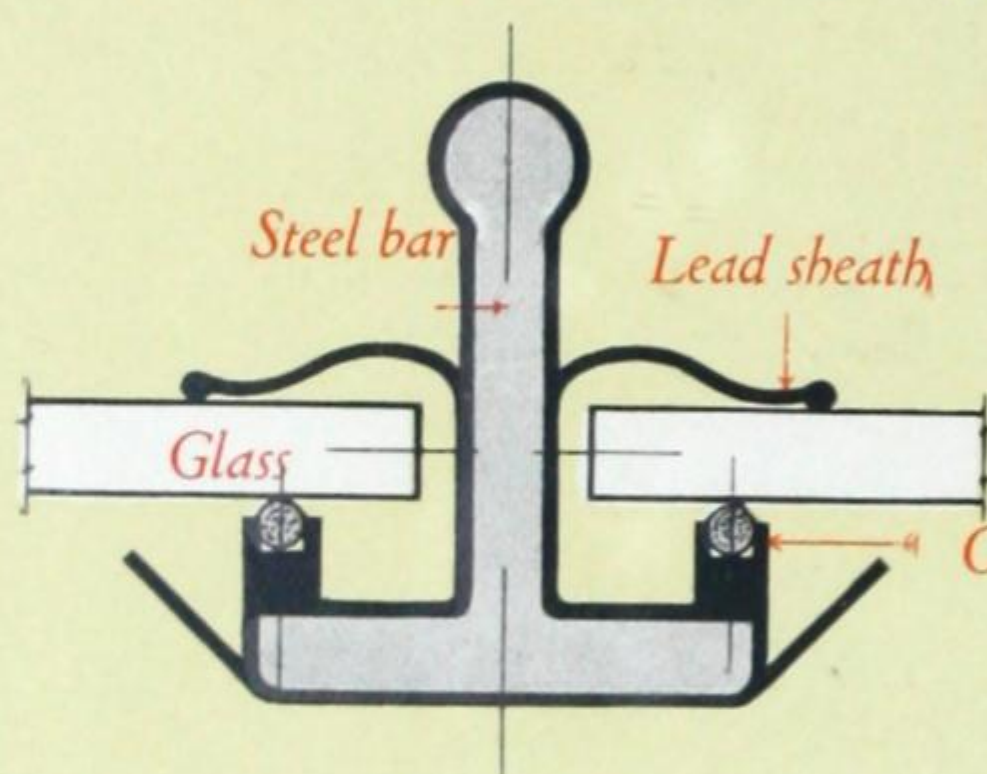
The form of lead capping allows it to be turned up or down without an angular bend, so that broken glass squares can be easily replaced.

Oiled asbestos cords are fixed as shewn, providing a plastic but imperishable seating material and a perfectly dust-tight joint.

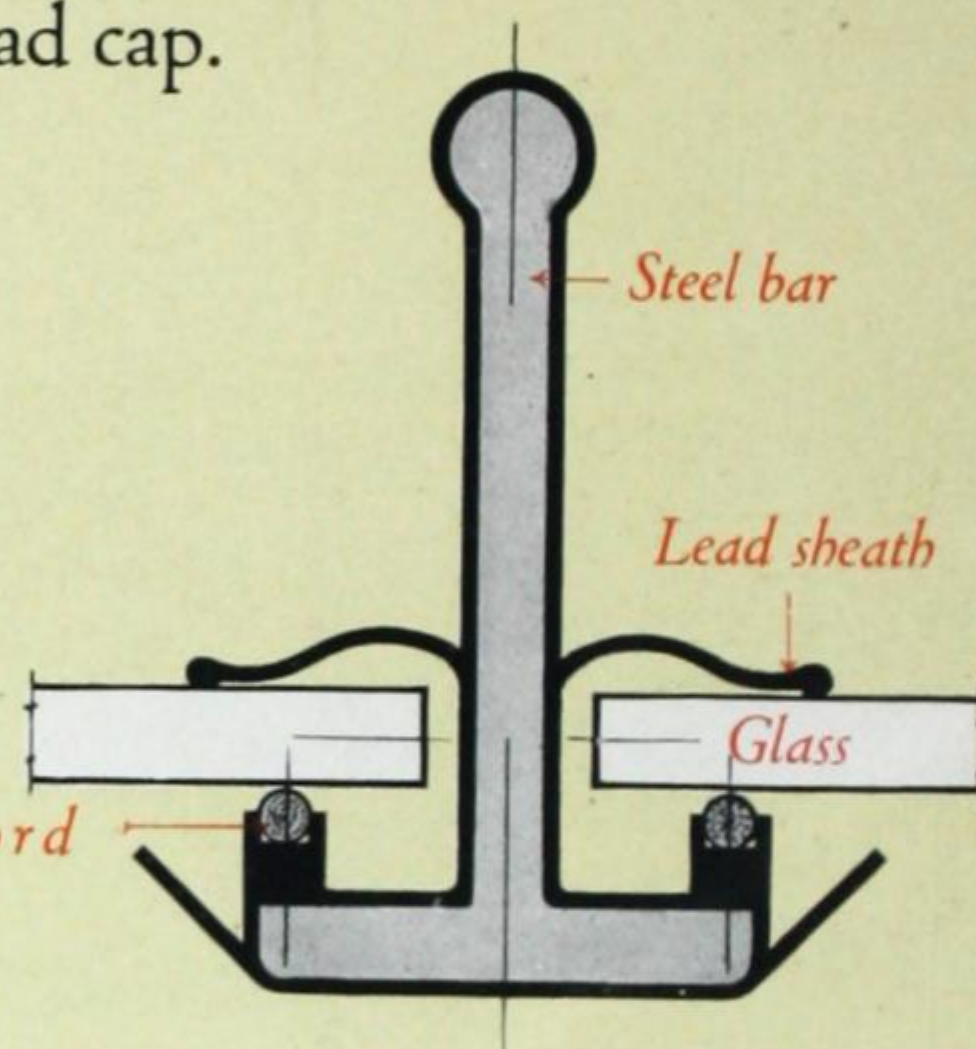
The steel bar is *galvanized* and completely covered with a jointless lead sheath, and no cutting or drilling is done to the bar after rust-proofing.

The fixing shoes are of solid copper, and secured to the bars by our patent system without perforating the lead cap.

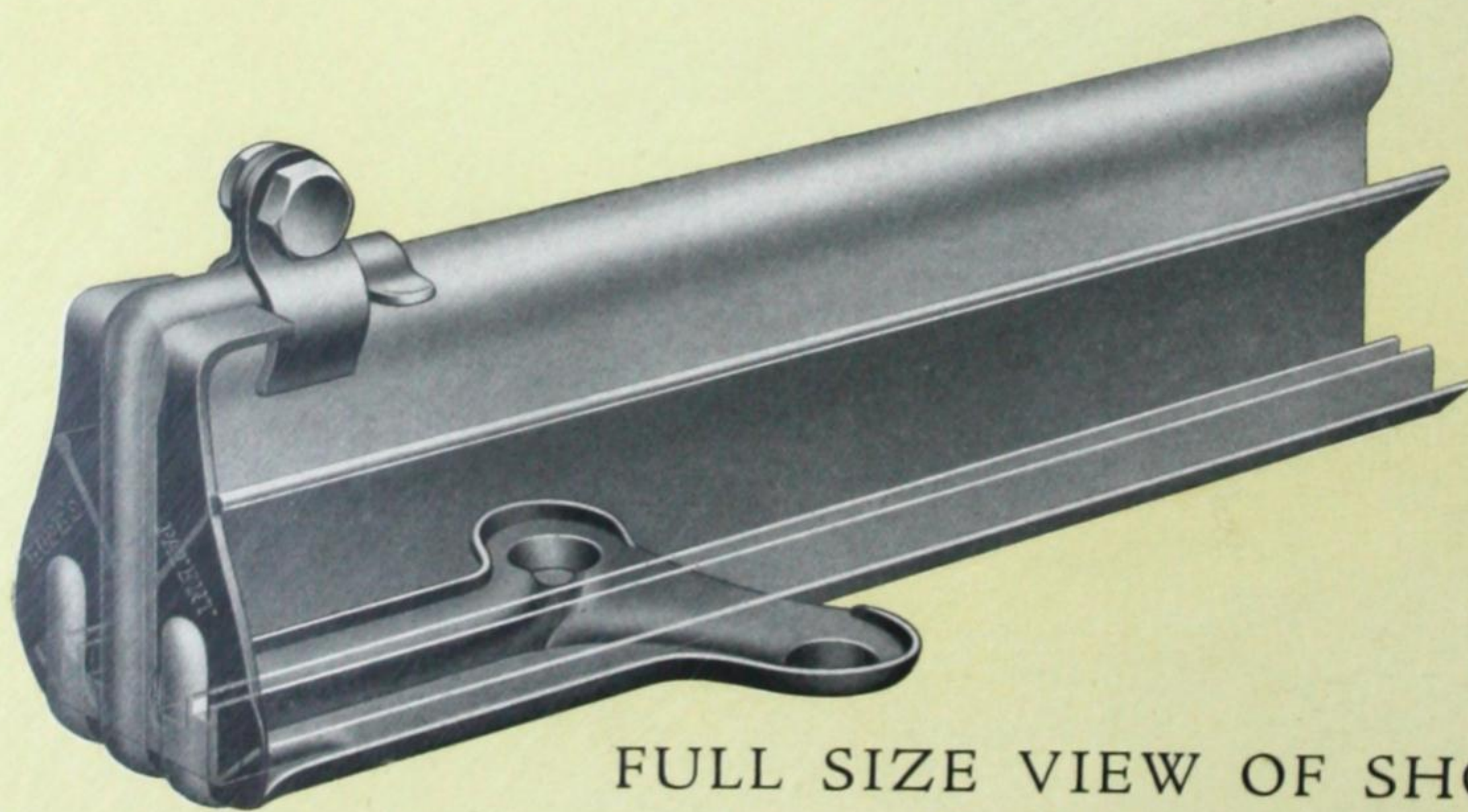
FULL SIZE SECTIONS OF BARS



Section B₁ to carry 7 ft. 6 in.



Section O₃ to carry 11 ft.



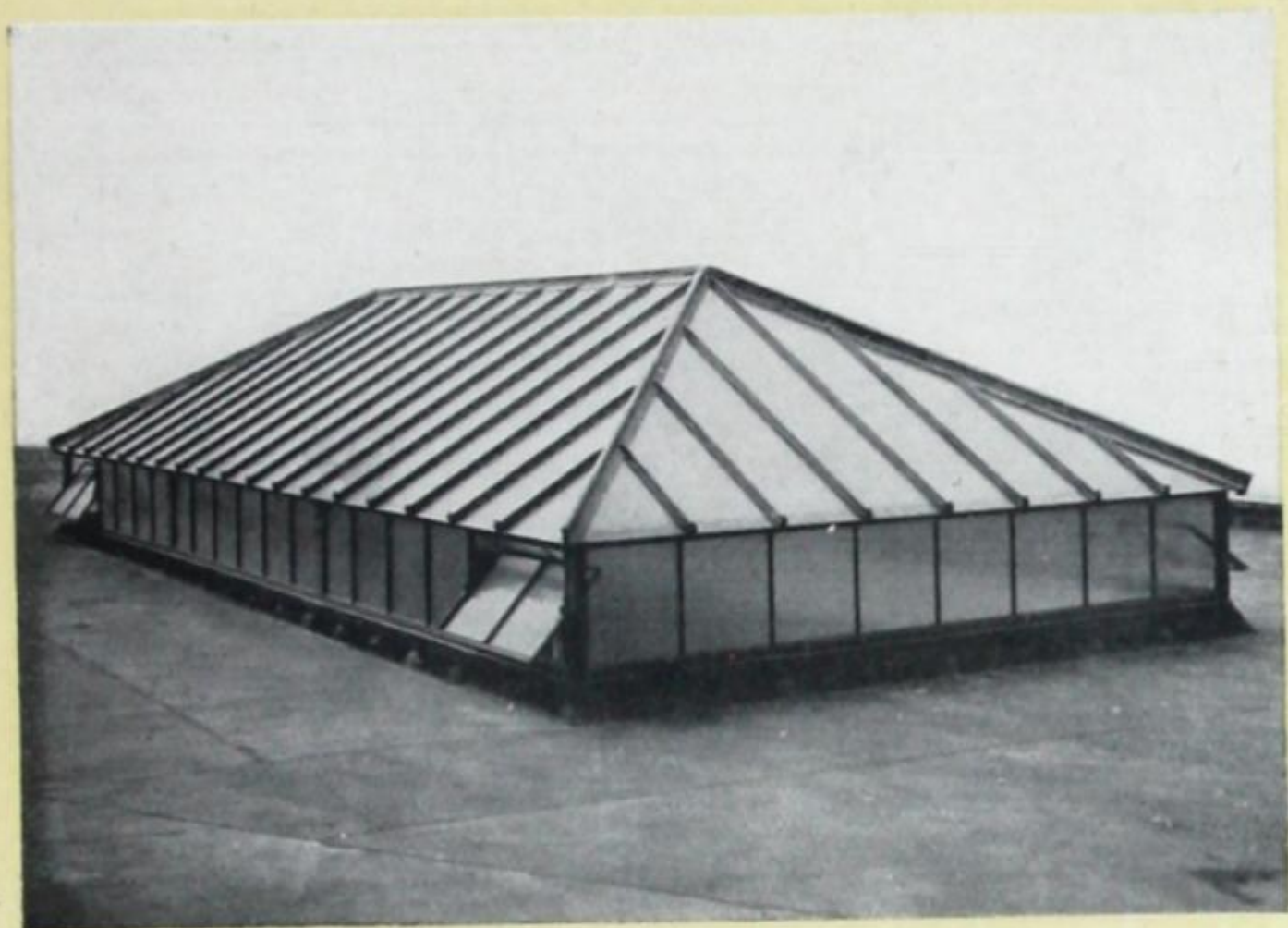
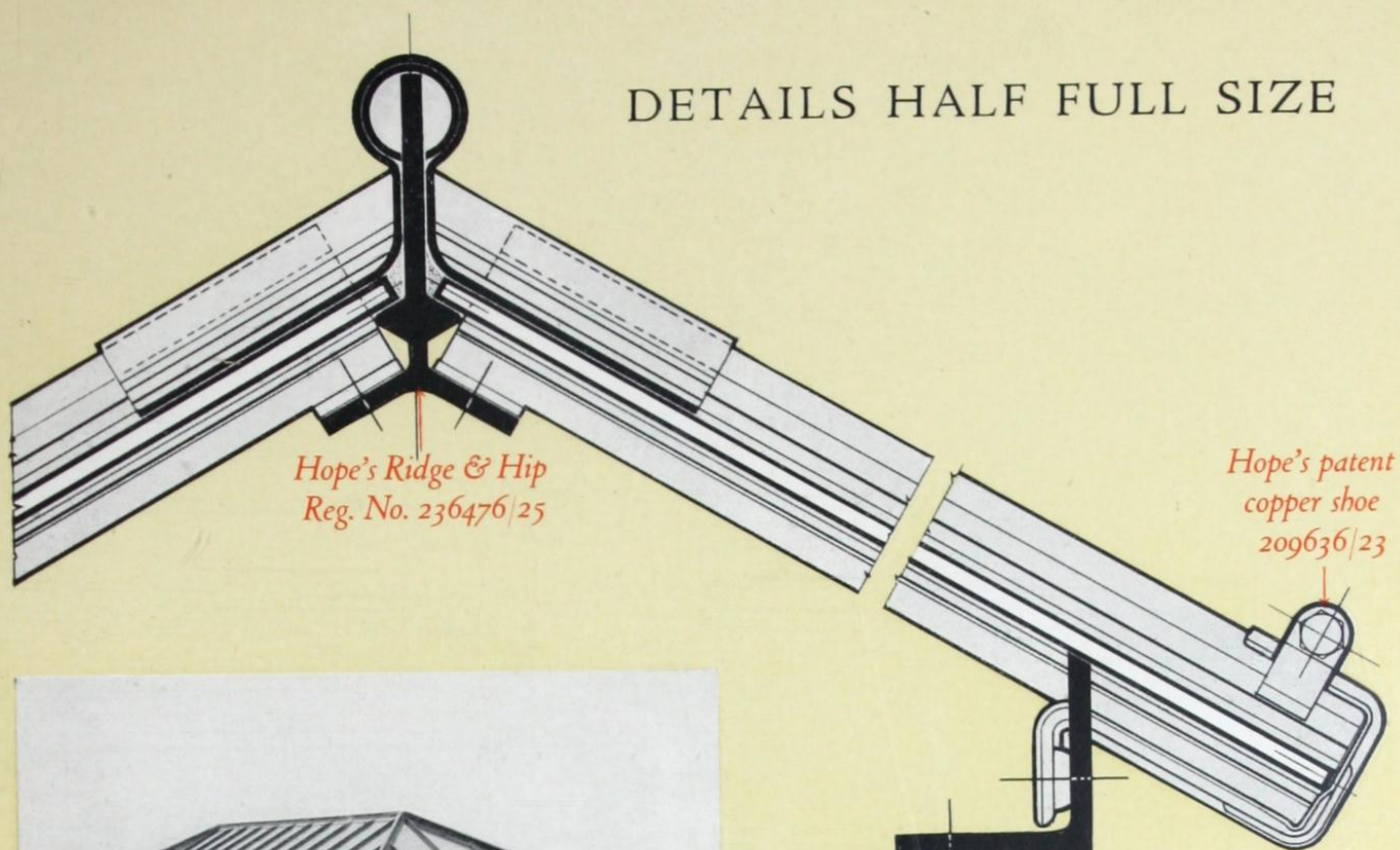
FULL SIZE VIEW OF SHOE

(Patent No. 209636/23)

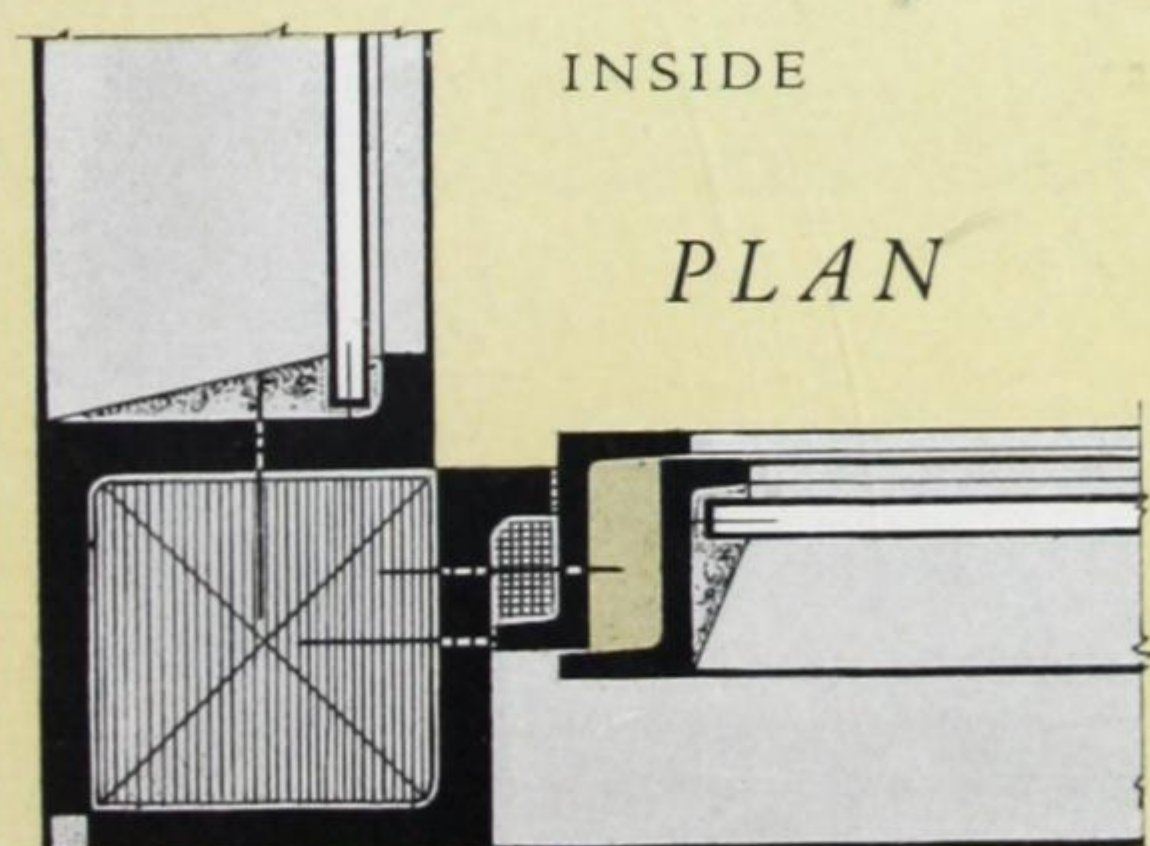
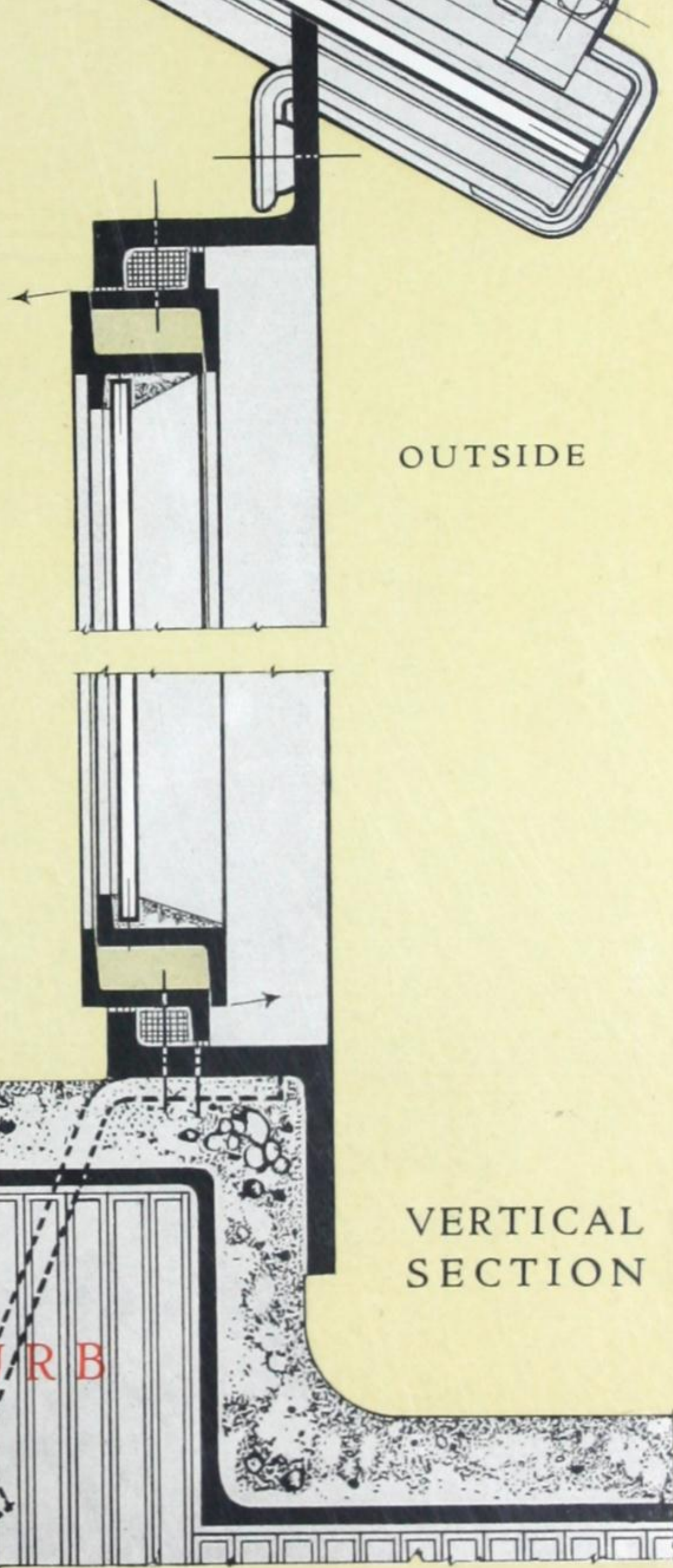
Illustrated catalogue of Hope's Patent Roof Glazing will be sent on application.

and Steel Lantern Lights

DETAILS HALF FULL SIZE



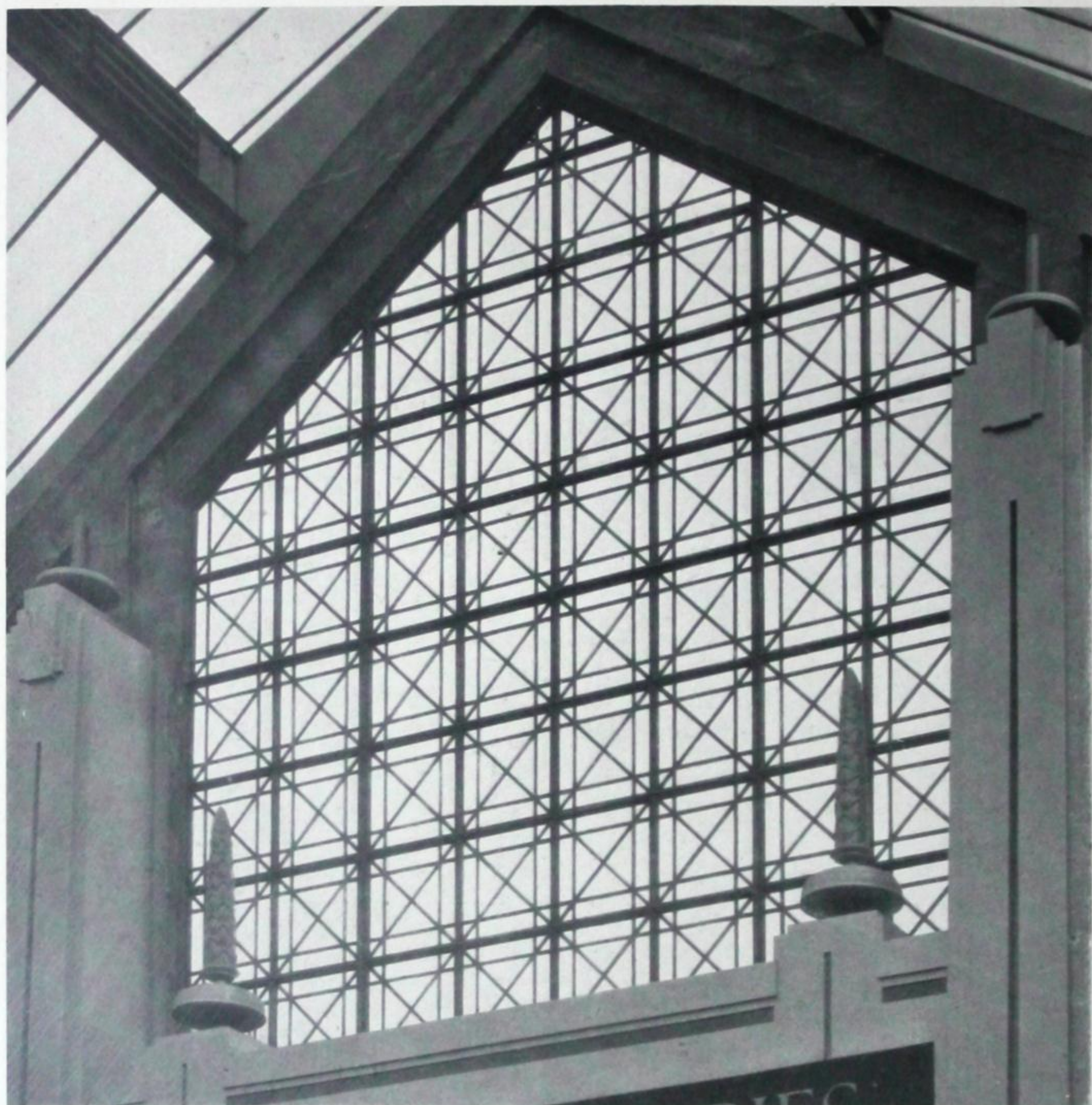
PHOTOGRAPH OF LANTERN LIGHT WITH GLAZED VERTICAL SIDES, CONTAINING SWINGING VENTILATORS OPERATED BY GEAR. CONSTRUCTION IS ENTIRELY OF STEEL, WITH OUR PATENT LEAD-COVERED GLAZING BARS ON ROOF.



THE FOLLOWING PAGES ARE GIVEN TO
PHOTOGRAPHS OF PUBLIC BUILDINGS,
BANKS, UNIVERSITIES, SCHOOLS, DWEL-
LING HOUSES, Etc., IN VARIOUS PARTS OF THE
WORLD WHERE HOPE'S METAL WINDOWS
HAVE BEEN USED.



BRITISH EMPIRE EXHIBITION · WEMBLEY



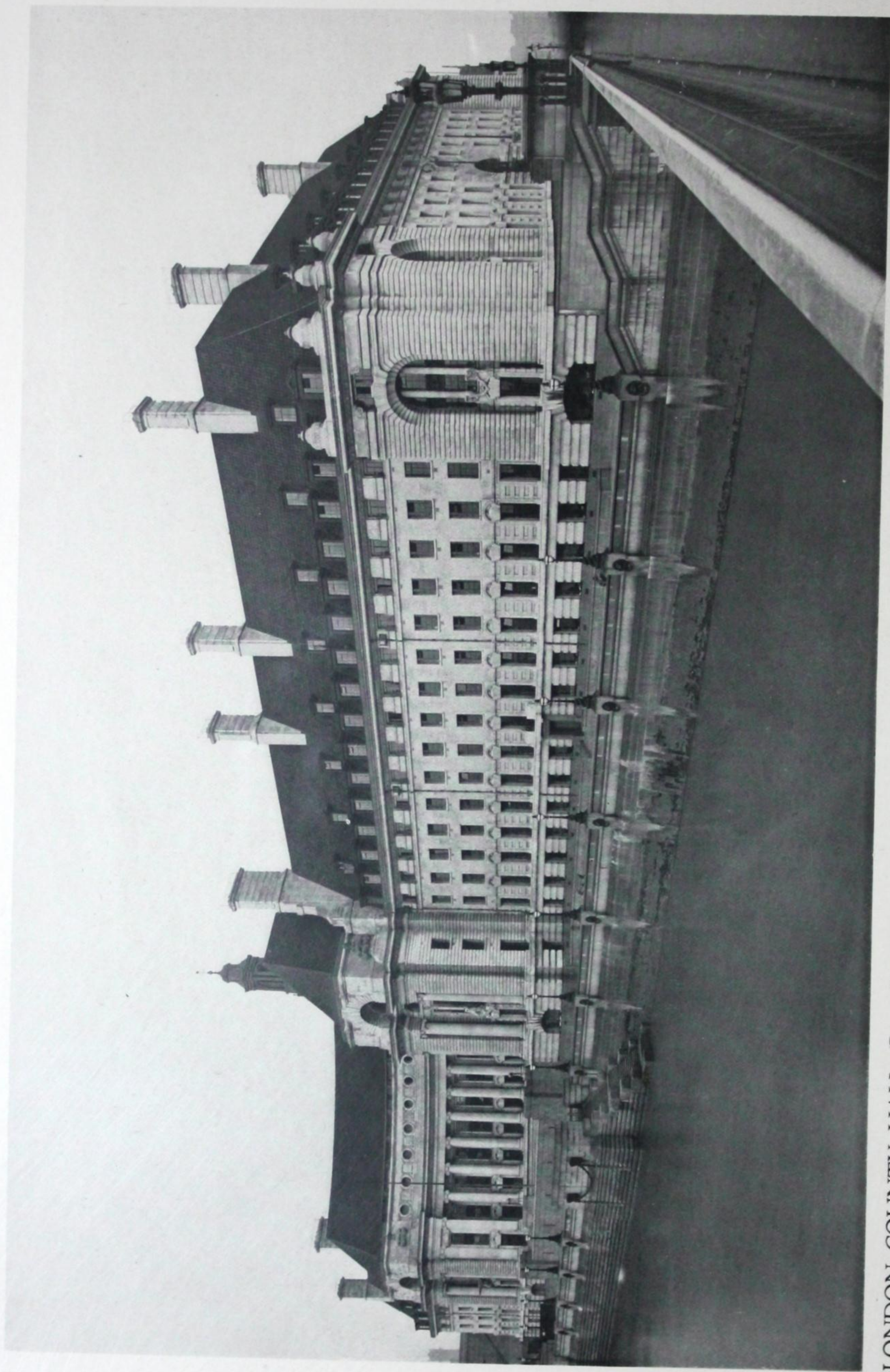
A LARGE WINDOW IN THE PALACE OF INDUSTRY

Architects - Sir John W. Simpson & Major Maxwell Ayrton
General Contractors - - - Sir Robert McAlpine & Sons

BRITISH EMPIRE EXHIBITION · WEMBLEY



WINDOWS & ROOF GLAZING IN THE PALACE OF ENGINEERING
OVER HALF A MILLION SQUARE FEET OF HOPE'S
PATENT GLASS ROOFING AND STEEL WINDOWS



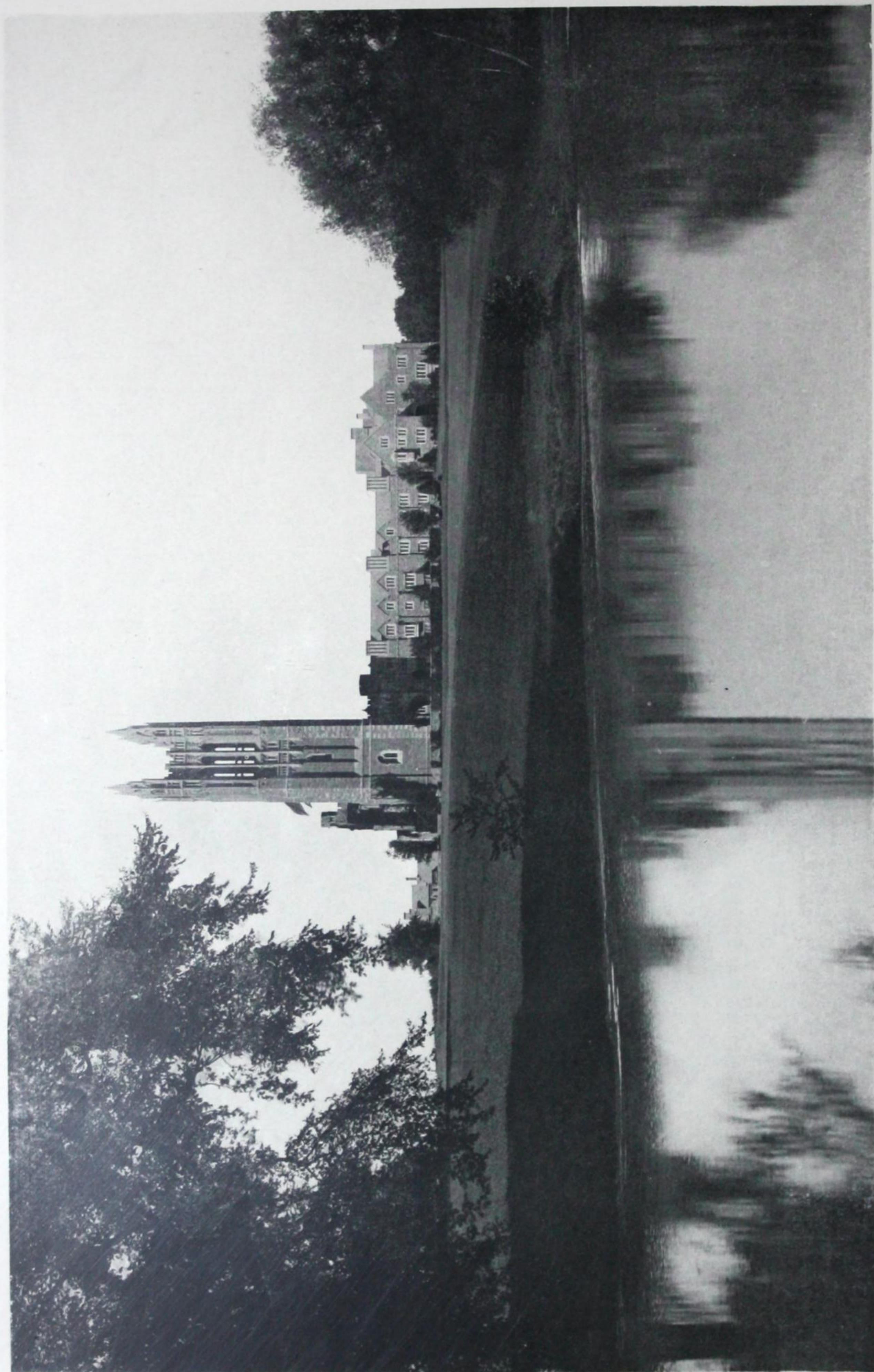
LONDON COUNTY HALL (River Front)

Ralph Knott, Architect



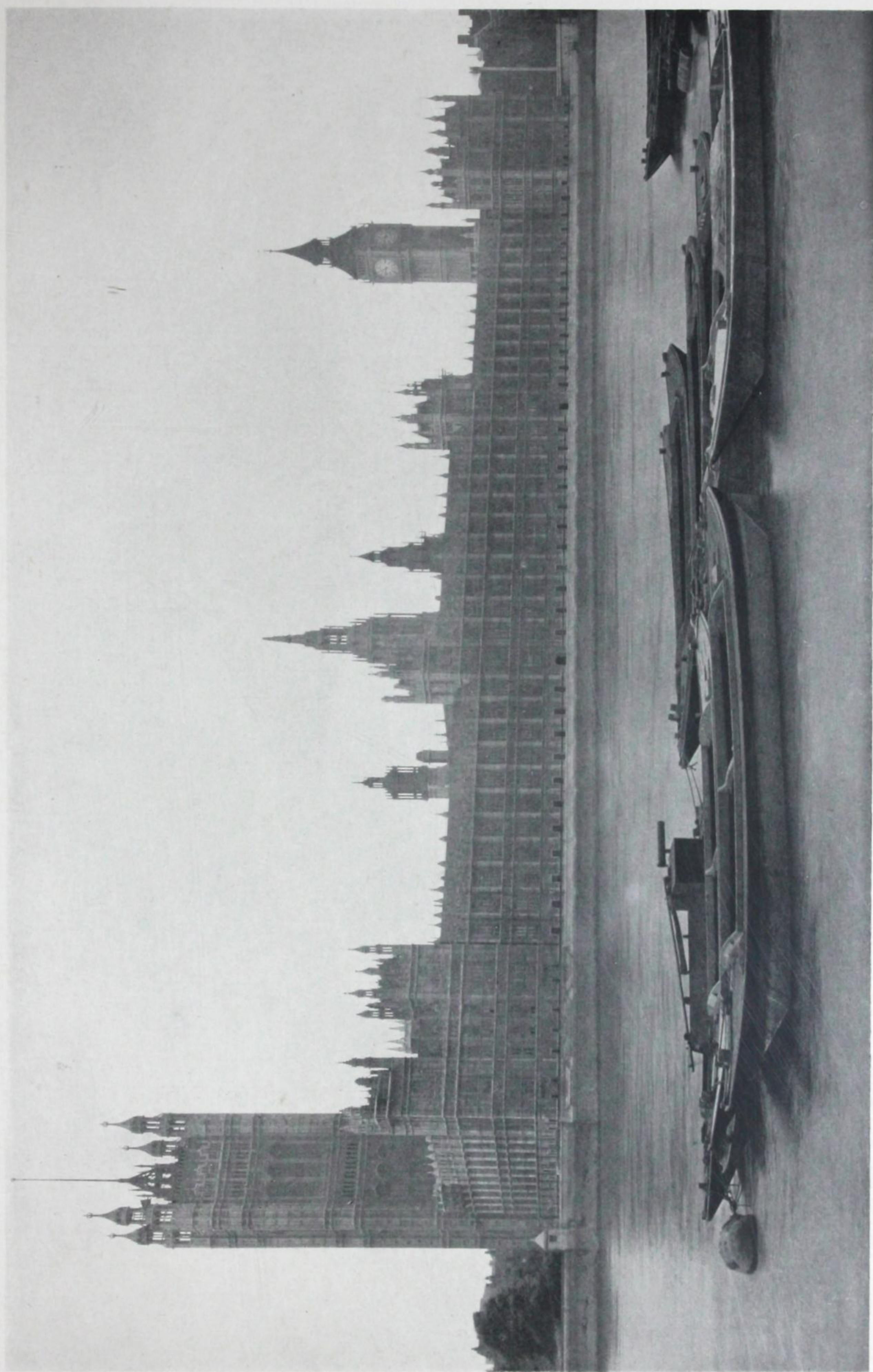
LONDON COUNTY HALL (Another view)

Ralph Knott, Architect

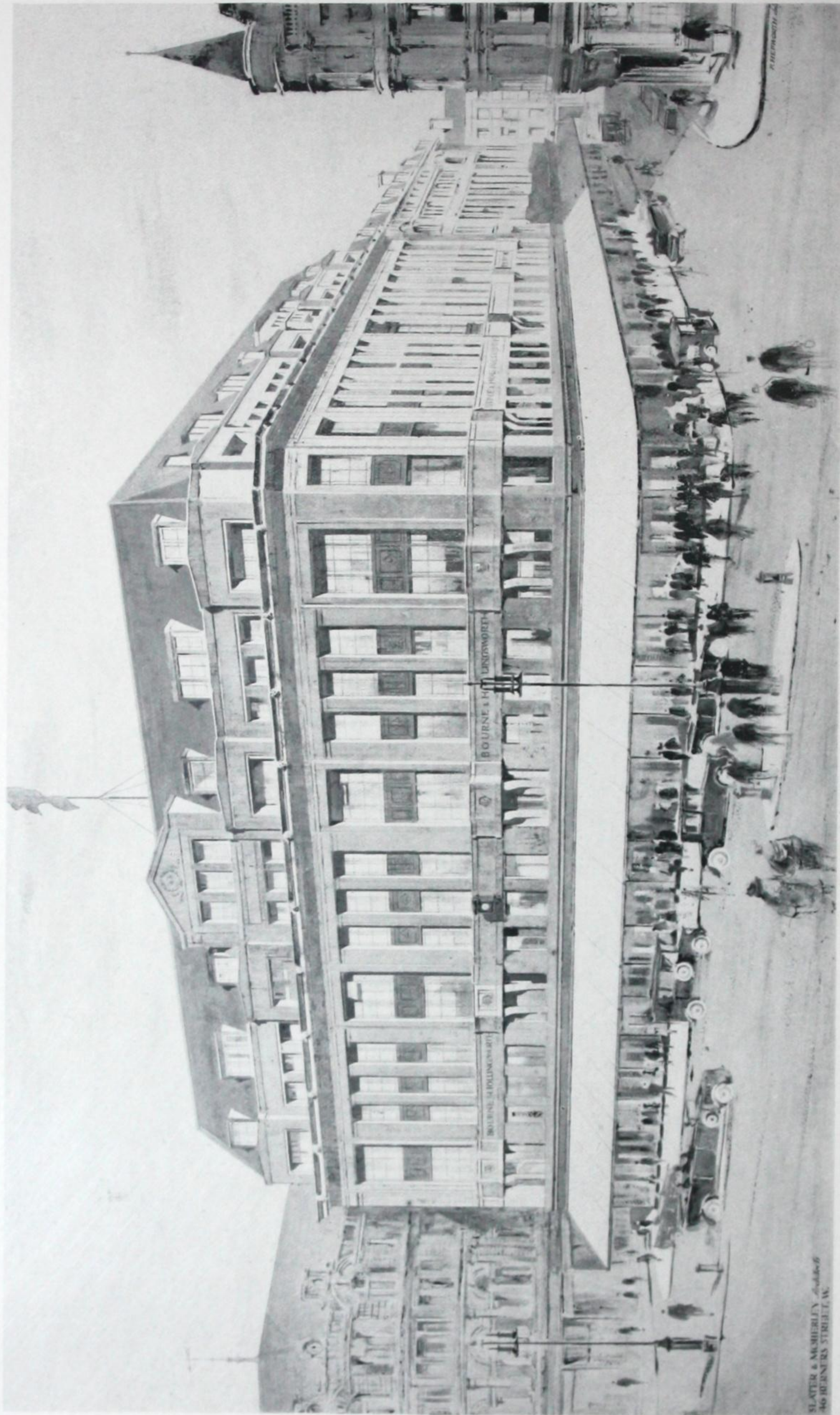


PRINCETON UNIVERSITY, GRADUATE COLLEGE

Cram, Goodhue & Ferguson, Architects

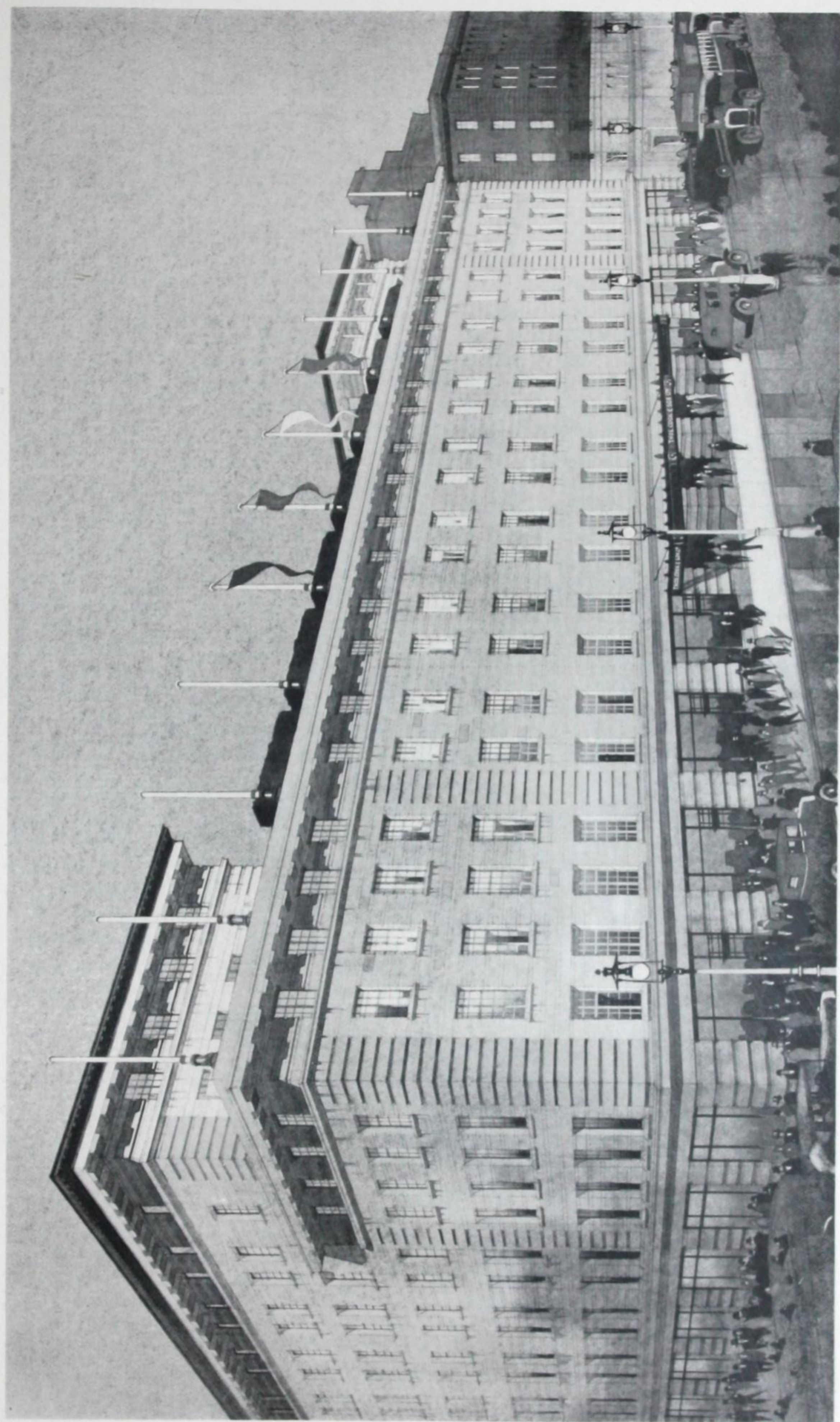


HOUSES OF PARLIAMENT, WESTMINSTER



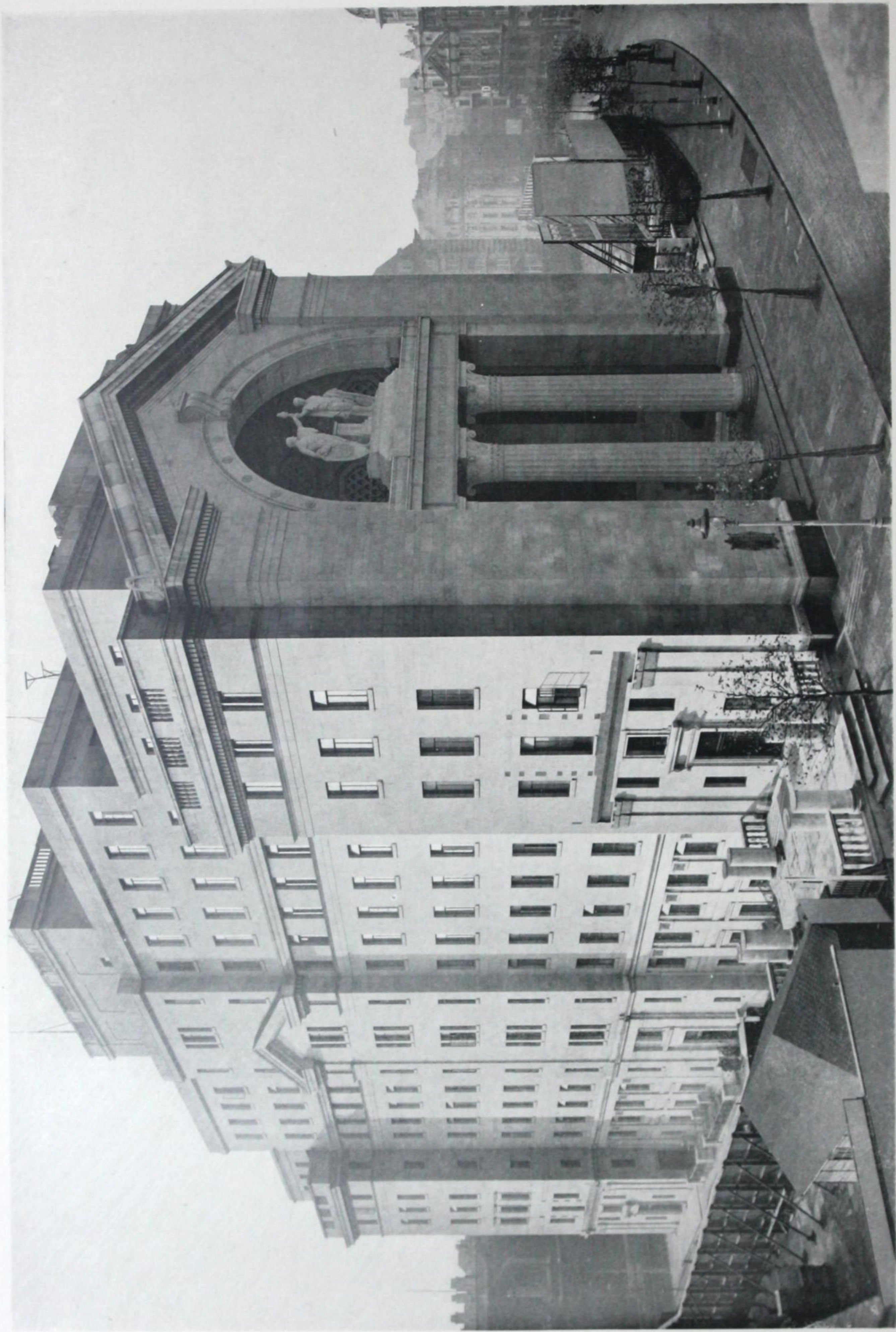
BOURNE & HOLLINGSWORTH, LONDON

Slater & Moberly, Architects



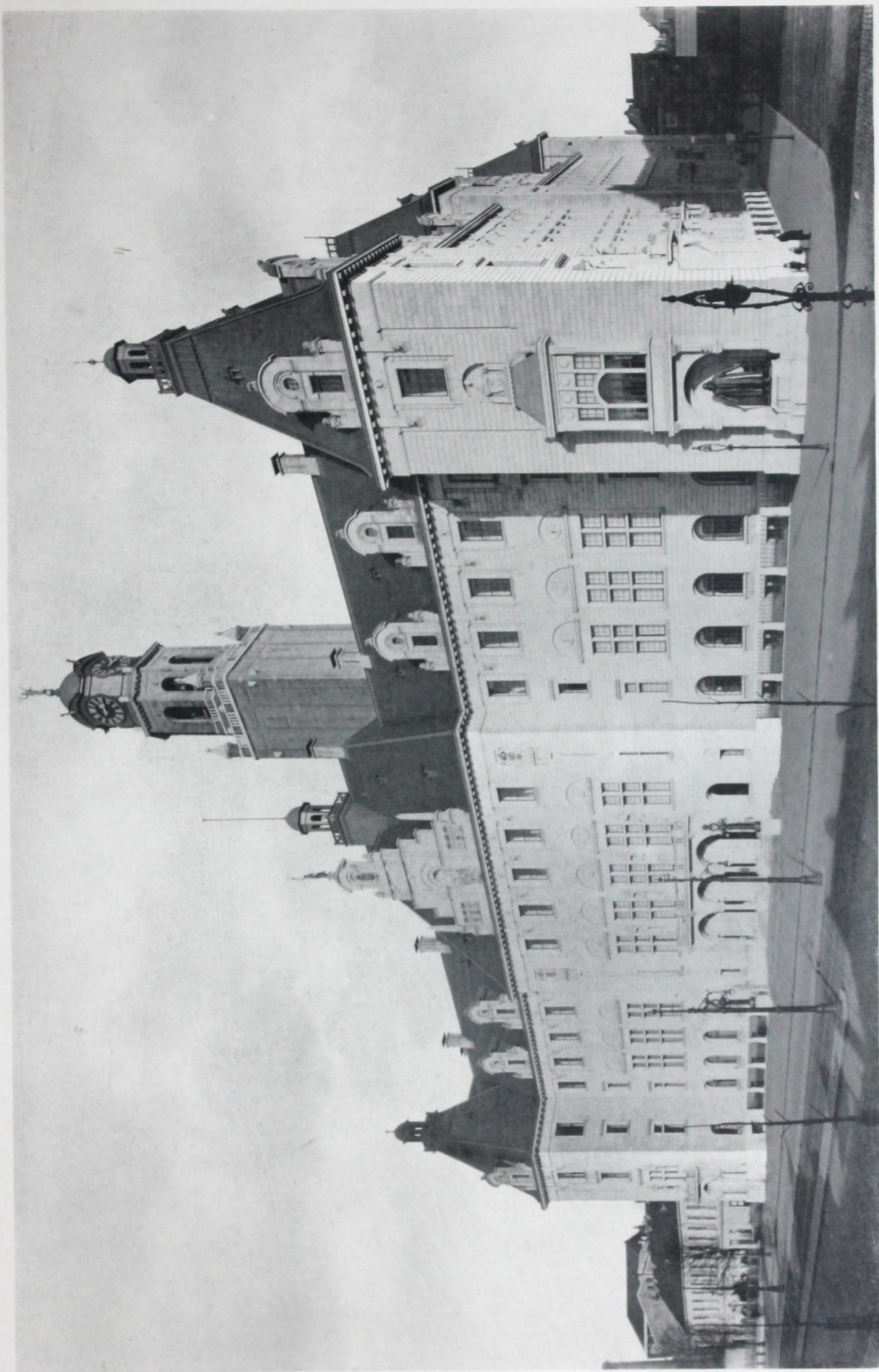
DEVONSHIRE HOUSE SITE, LONDON (New Buildings for Thos. Cook & Son Ltd.)

Arnold Mitchell, Architect



BUSH HOUSE, LONDON

Helmle & Corbett, Architects



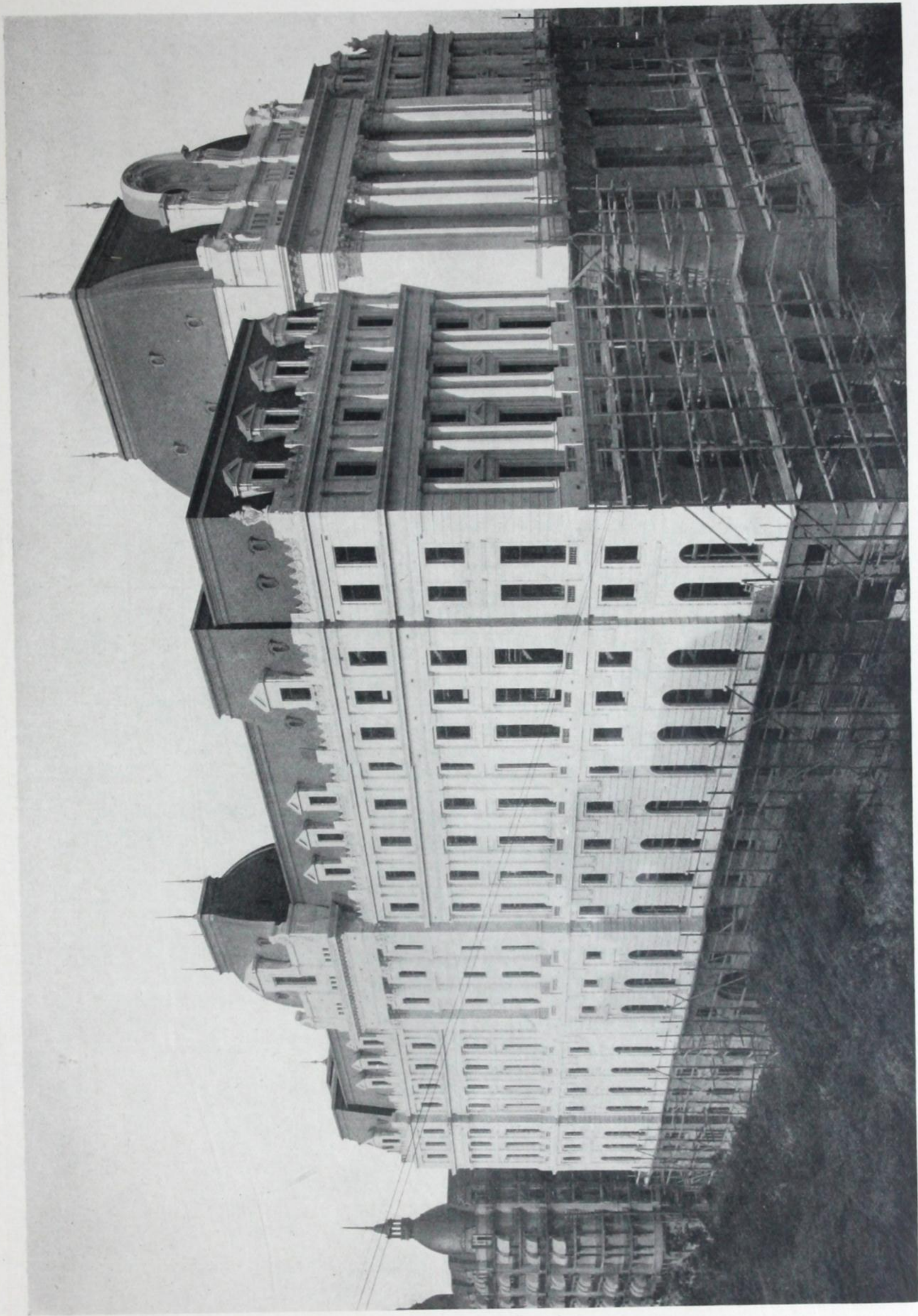
ROTTERDAM TOWN HALL

Prof. Henri Evers & A. J. Th. Kok, Architects



HONG KONG & SHANGHAI BANK, SHANGHAI

Palmer & Turner, Architects



Cia Gen de Abras Publicas

BUENOS AIRES HEAD POST OFFICE



MANITOBA PARLIAMENT BUILDINGS

Frank Simon, Architect



MONTREAL COURT HOUSE

Louis A. Amos, Ernest Cormier & Chas. J. Saxe, Associated Architects



BUSH HOUSE, LONDON

Helmle & Corbett, Architects



WOLSELEY HOUSE, LONDON

W. Curtis Green, Architect



DISTRICT BANK LIMITED, LONDON

Francis Jones & Dalrymple, Architects

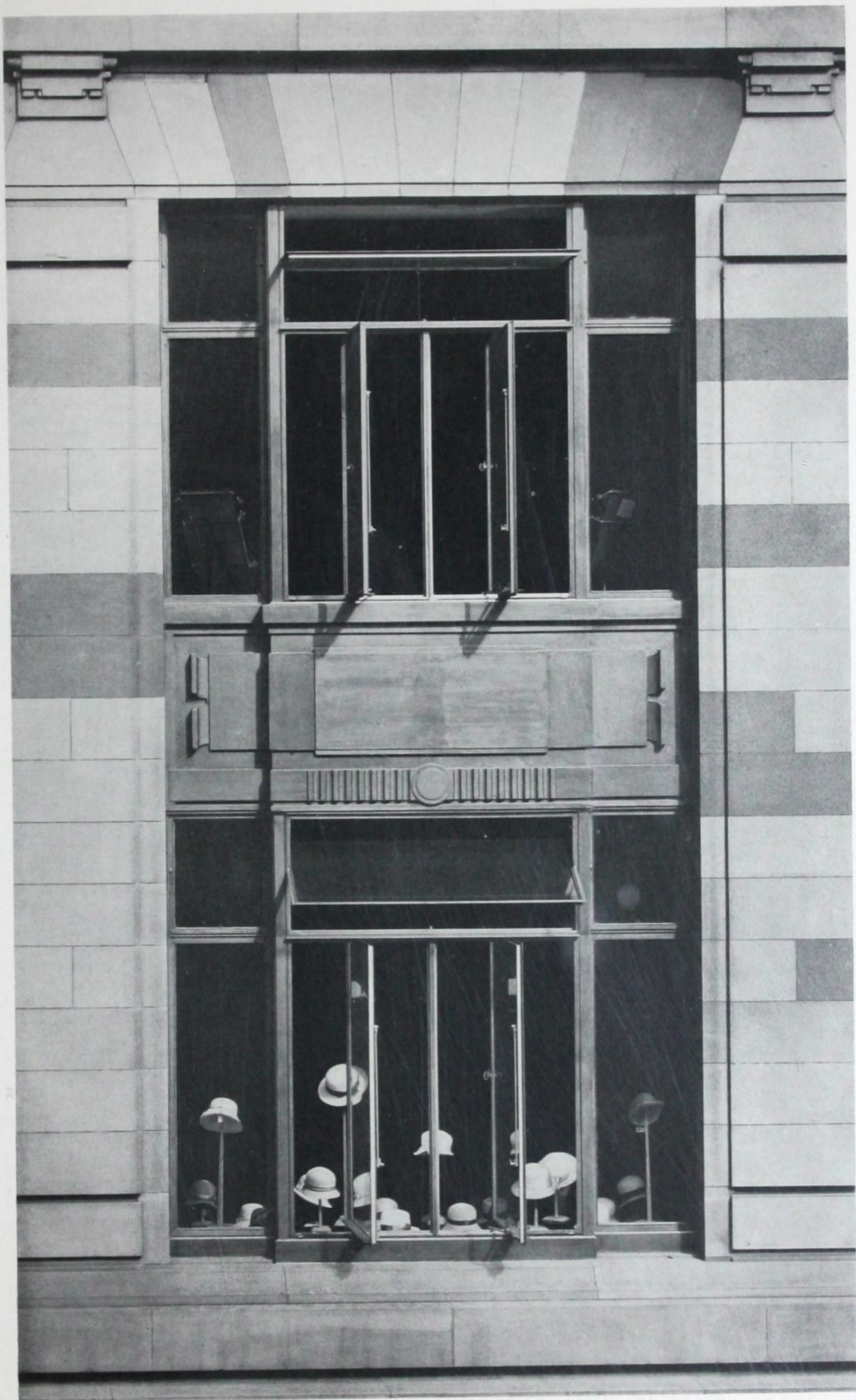


BRITISH & FOREIGN MARINE INSURANCE CO. OFFICES, LONDON
Campbell Jones, Sons & Smithers, Architects



LLOYDS BANK LTD., MANCHESTER

Charles Clegg & Sons, Architects



PROGRESS CO-OPERATIVE SOCIETY, GLASGOW

Keppie & Henderson, Architects



BRONZE WINDOW AT THE OFFICES OF THE EAGLE STAR & BRITISH
DOMINIONS INSURANCE CO. LTD., LONDON

Gunton & Gunton, Architects



BRONZE WINDOW AT THE HONG KONG AND SHANGHAI BANK, SHANGHAI
Palmer & Turner, Architects



YOKOHAMA SPECIE BANK, SHANGHAI

Palmer & Turner, Architects



CUSTOM HOUSE, HANKOW

Stewardson, Spence & Watson, Architects



ANGLO SOUTH AMERICAN BANK, ANTOFAGASTA, CHILE

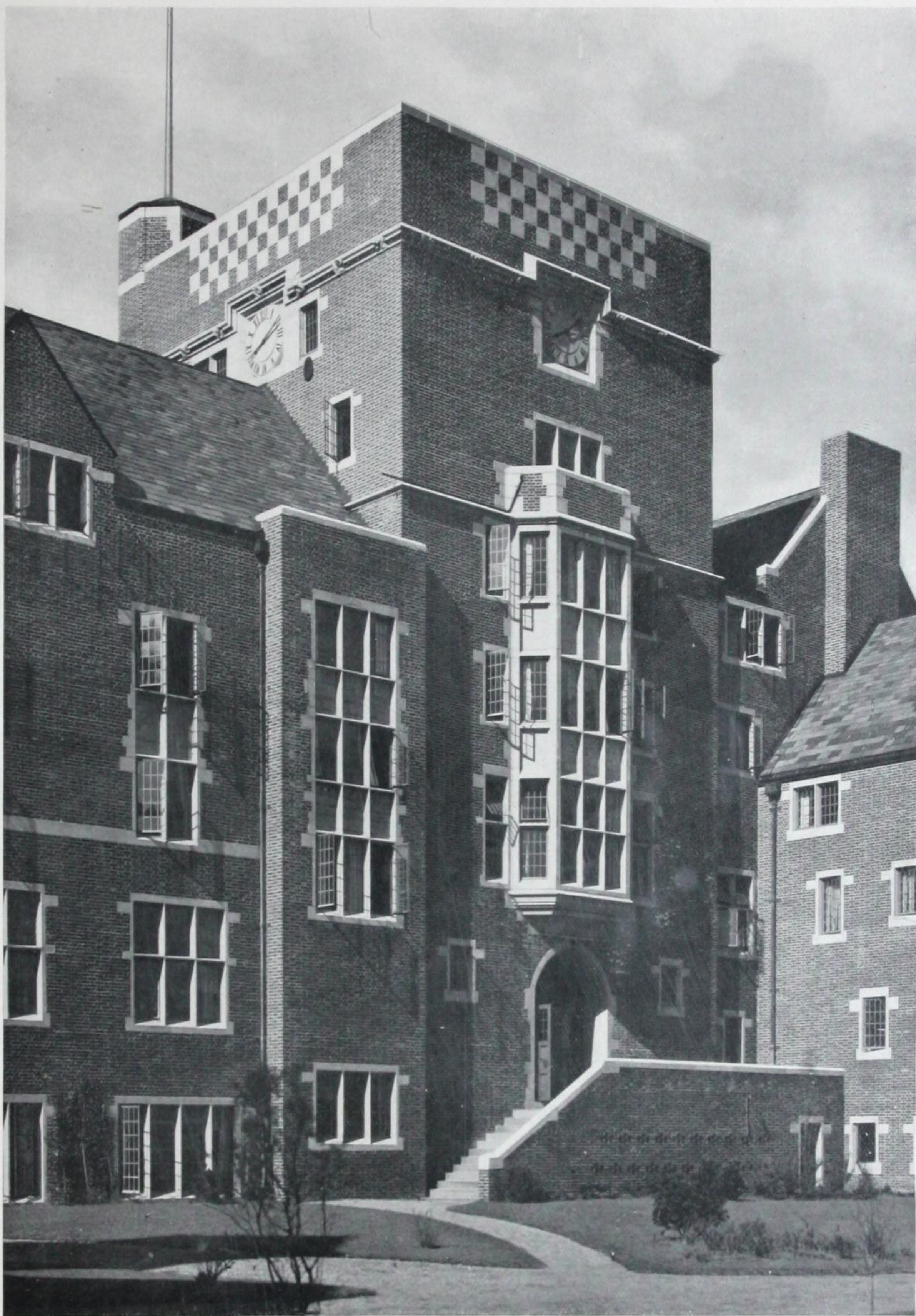


ANNEX TO PARLIAMENT BUILDINGS, QUEBEC CITY *Tanquay & Chenevert, Archts.*



CRANE LIMITED, MONTREAL

Hugh Vallance, Architect



TAFT SCHOOL, WATERTOWN, CONN.

Cram, Goodhue & Ferguson, Architects



CHATEAU FRONTENAC, QUEBEC

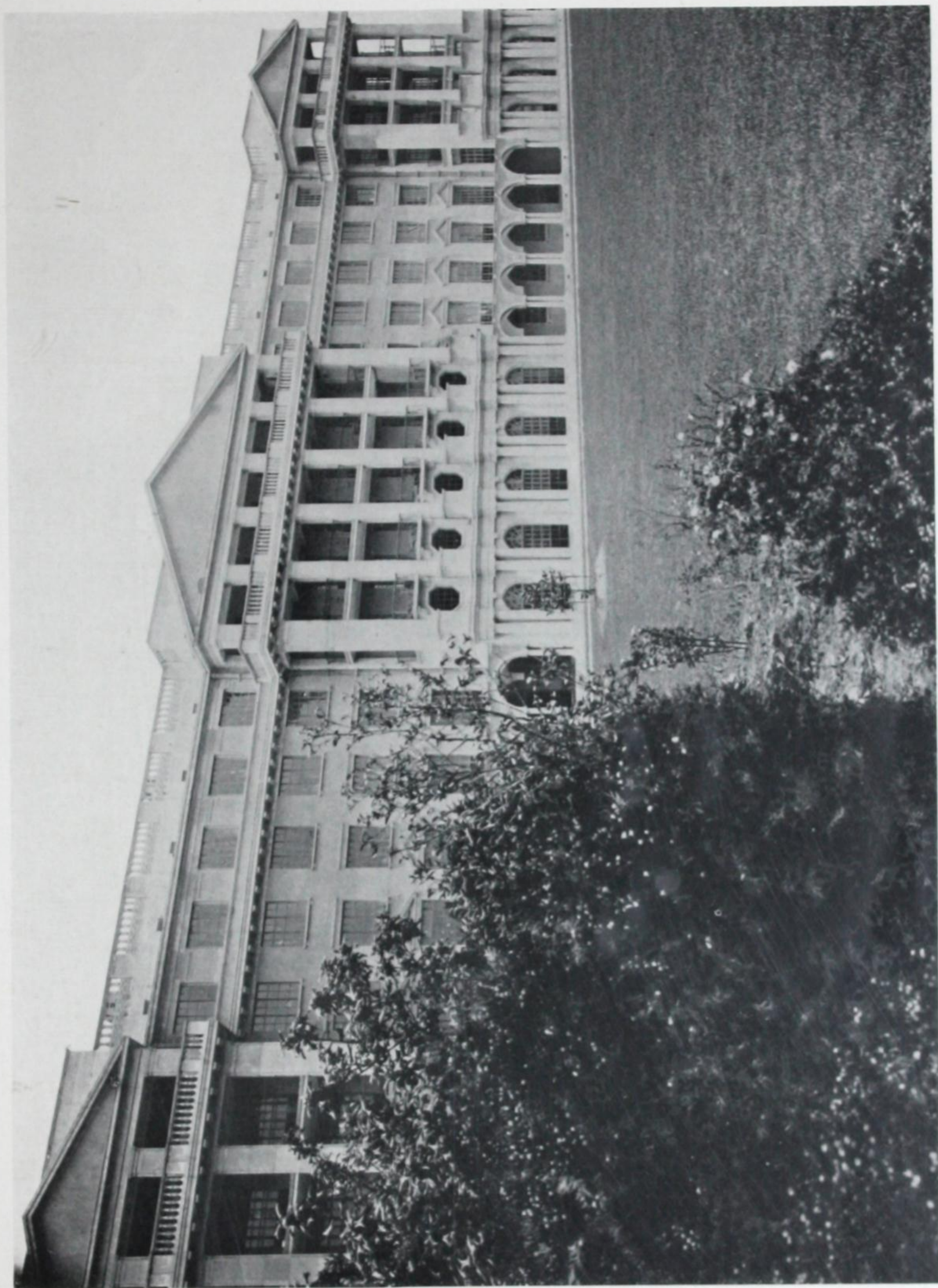
Maxwell & Pitts, Architects



CHATEAU FRONTENAC (Another view)



LIQUOR COMMISSION BUILDING, QUEBEC *Wilfred La Croix & Beauté & Morissette, Associated Architects*



COUNTRY HOSPITAL, SHANGHAI

L. E. Hudec, Architect

H OPE'S Metal Windows have been fitted in many of the most important modern University Buildings throughout the world, amongst them being the following:

Great Britain and Ireland.

OXFORD CORPUS CHRISTI · ST. HUGH'S
 CAMBRIDGE . . CLARE · JESUS · KING'S · MAGDALENE · TRINITY, Etc.
 LONDON · BIRMINGHAM · EDINBURGH
 GLASGOW · BELFAST · DUBLIN



United States of America.

CORNELL · YALE · MISSOURI · GEORGETOWN
 HARVARD · BOSTON · WASHINGTON, D.C. · PENNSYLVANIA
 PRINCETON · CHICAGO · NASHVILLE, TENN. · VANDERBILT
 MICHIGAN · SOUTH WESTERN UNIVERSITY · MEMPHIS, TENN.

Canada.

McGILL · KINGSTON & LONDON, ONT. · TORONTO
 VANCOUVER · SASKATCHEWAN · REGINA · VICTORIA



WITWATERSRAND UNIVERSITY S. AFRICA
 PRINCE OF WALES COLLEGE, ACHIMOTA . . W. AFRICA
 WEST INDIAN AGRICULTURAL COLLEGE . . TRINIDAD



Schools and Colleges

ETON · REPTON · STOWE · WESTMINSTER · ROCHESTER

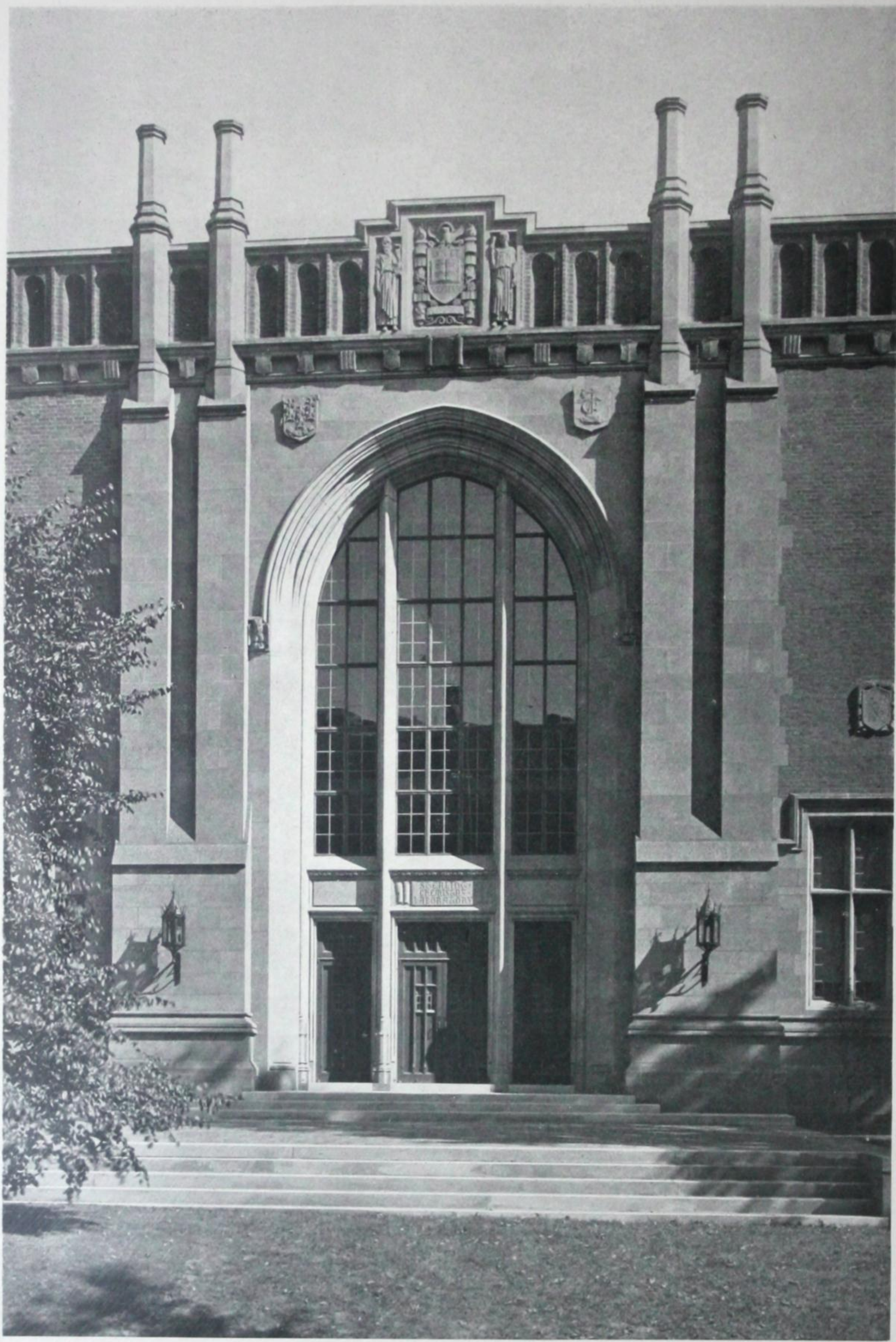
CONNECTICUT COLLEGE FOR WOMEN
 HAMILTON COLLEGE, CLINTON, N.Y.
 PHILADELPHIA DIVINITY SCHOOL, PA.
 TAFT SCHOOL, WATERTOWN, CONN.
 VIRGINIA MILITARY INSTITUTE
 WELLESLEY COLLEGE, MASS.
 VASSAR COLLEGE, POUGHKEEPSIE, N.Y.

KNOX COLLEGE, TORONTO · MEDICAL BUILDING, MONTREAL
 TECHNICAL SCHOOL, MONTREAL



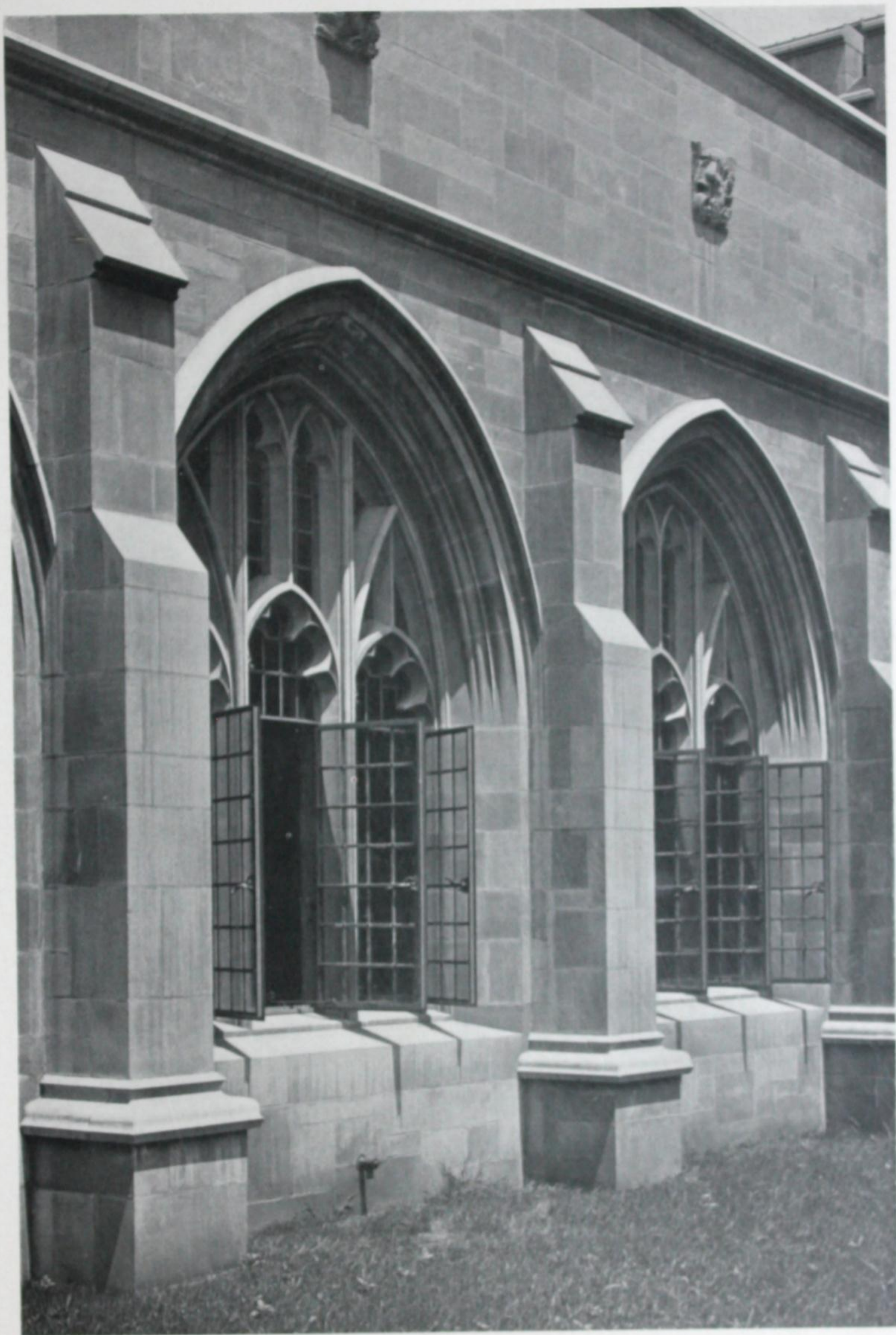
UNIVERSITY OF MICHIGAN, THE LAW COURTS

York & Sawyer, Architects



YALE UNIVERSITY, STERLING CHEMICAL LABORATORY

Delano & Aldrich, Architects



CHICAGO UNIVERSITY, IDA NOYES' HALL

Collidge & Hodgson, Architects



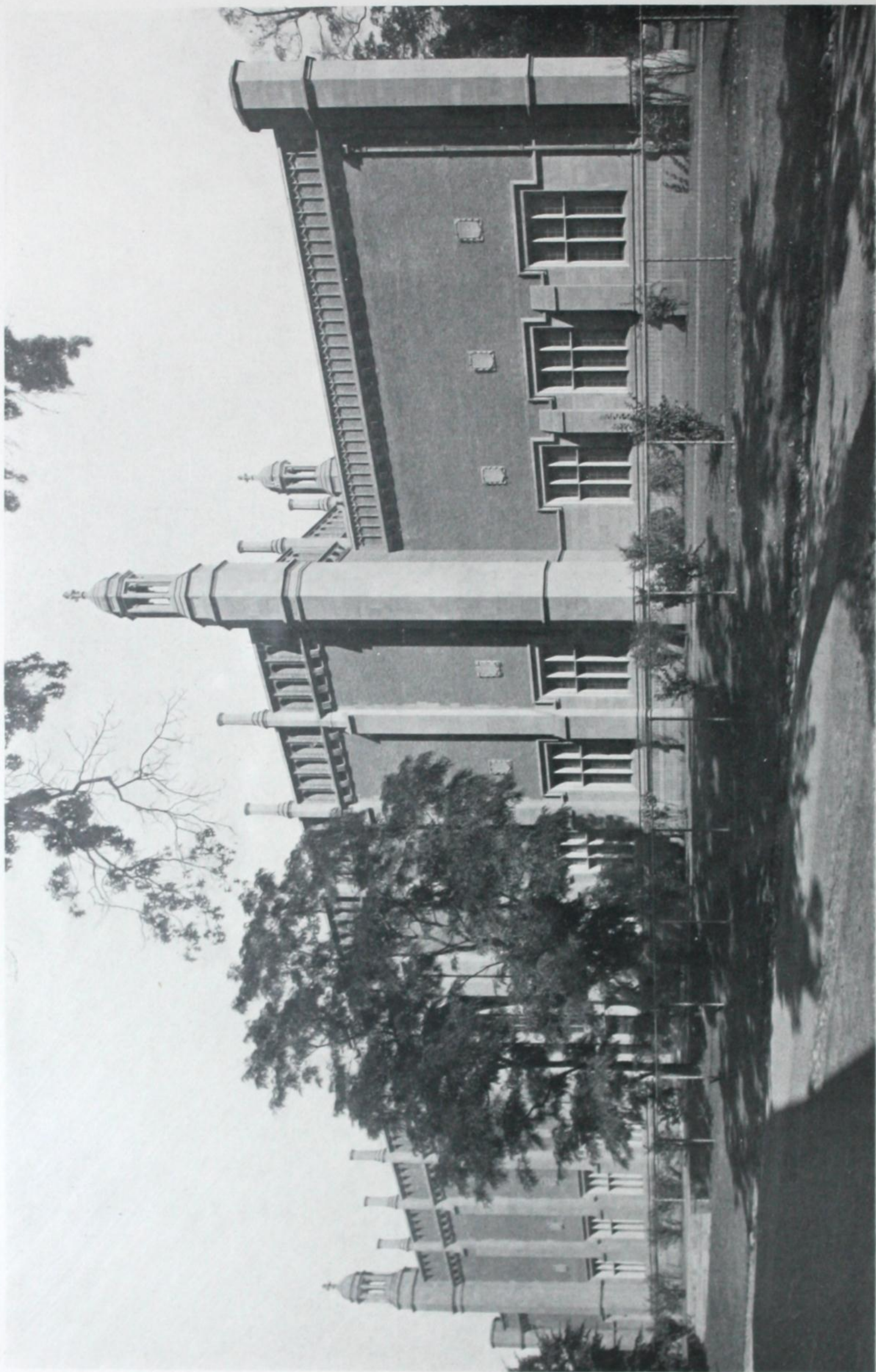
PRINCETON UNIVERSITY, PA., RUSSELL SAGE BUILDING

Frank Miles Day & Brother, Architects



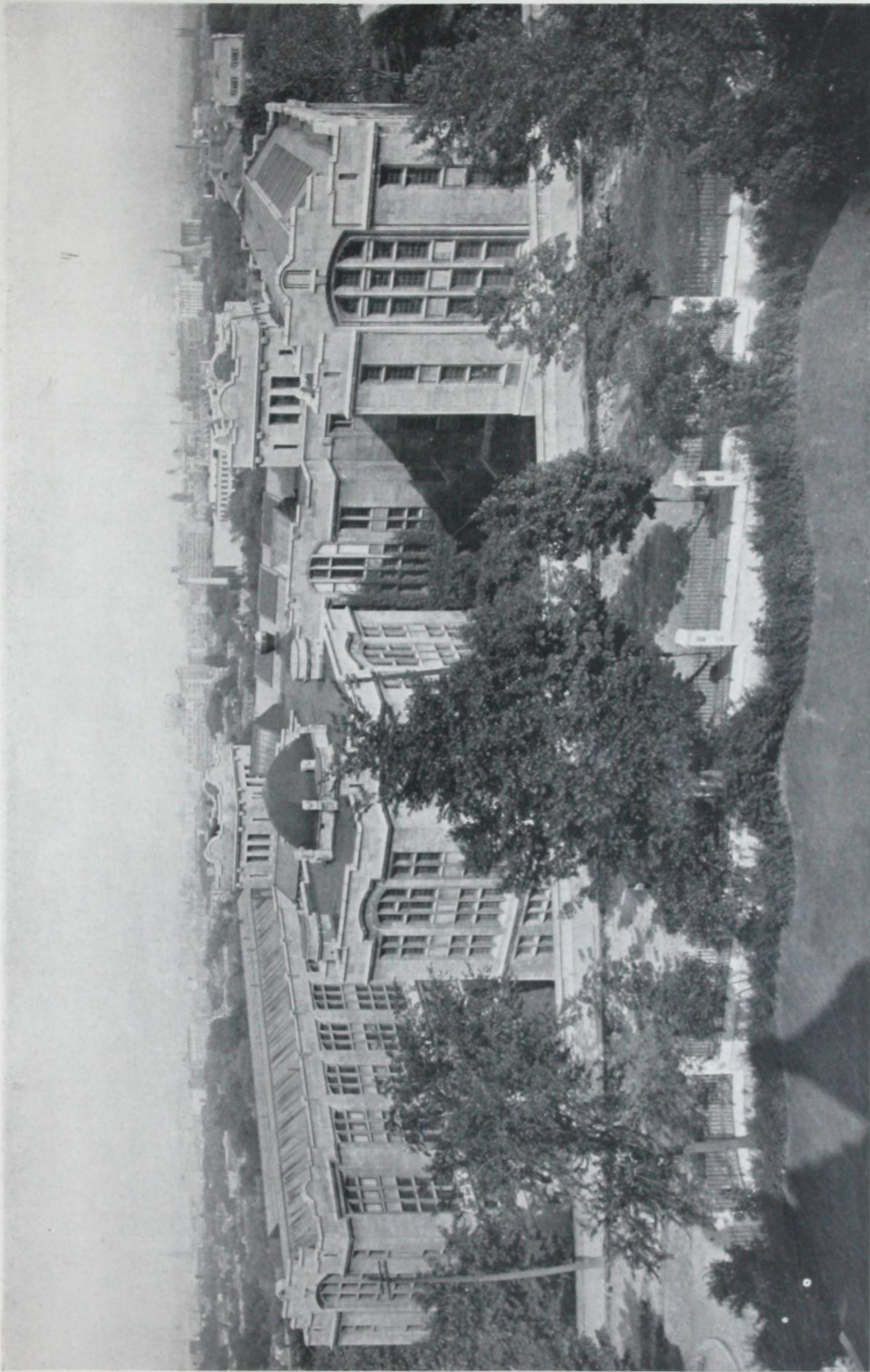
UNIVERSITY OF MICHIGAN (Another view)

York & Sawyer, Architects



YALE UNIVERSITY, STERLING CHEMICAL LABORATORY

Delano & Aldrich, Architects



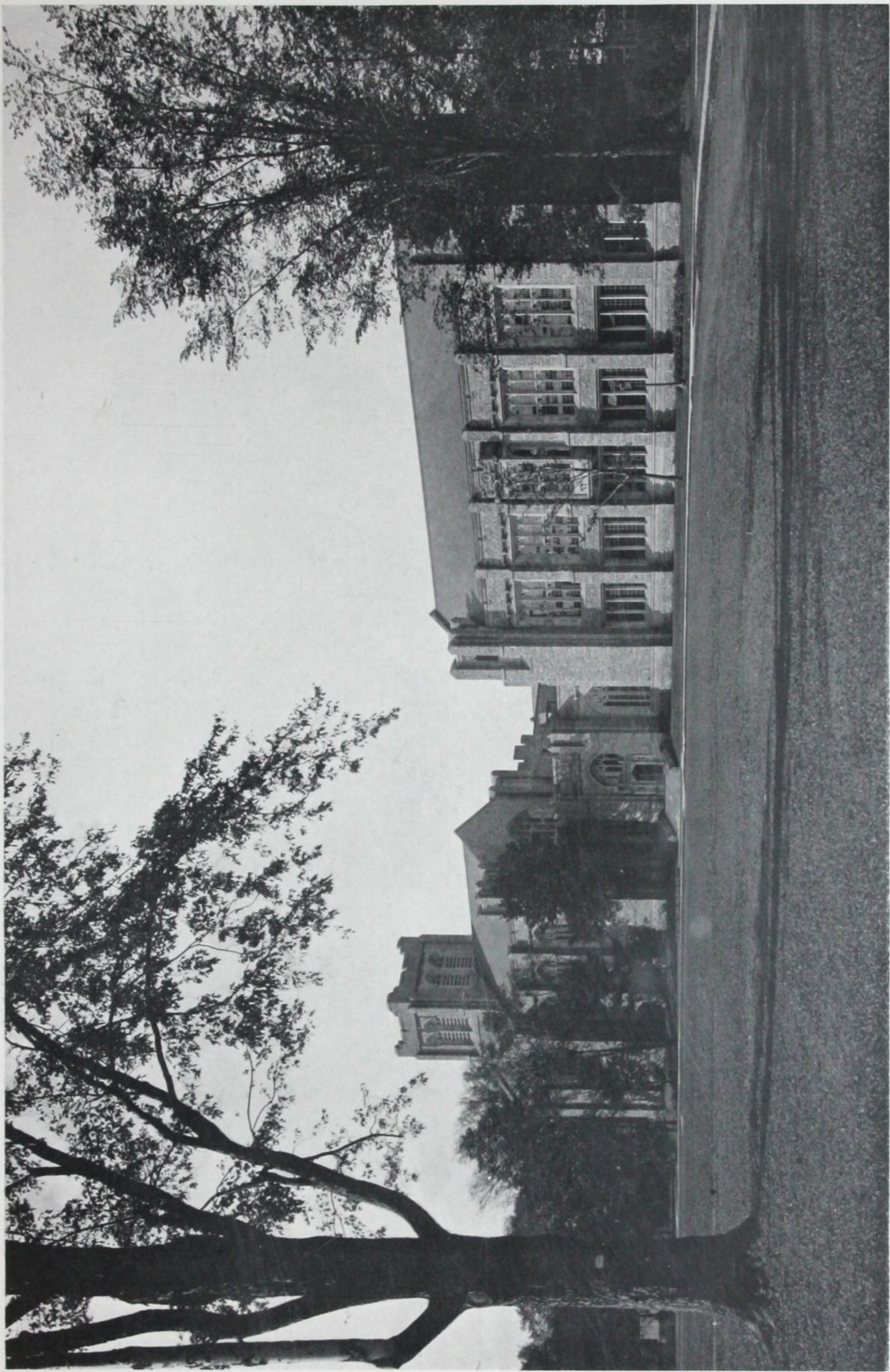
McGILL UNIVERSITY, MONTREAL, MEDICAL BUILDING

David R. Brown & Hugh Vallance, Architects



ETON COLLEGE

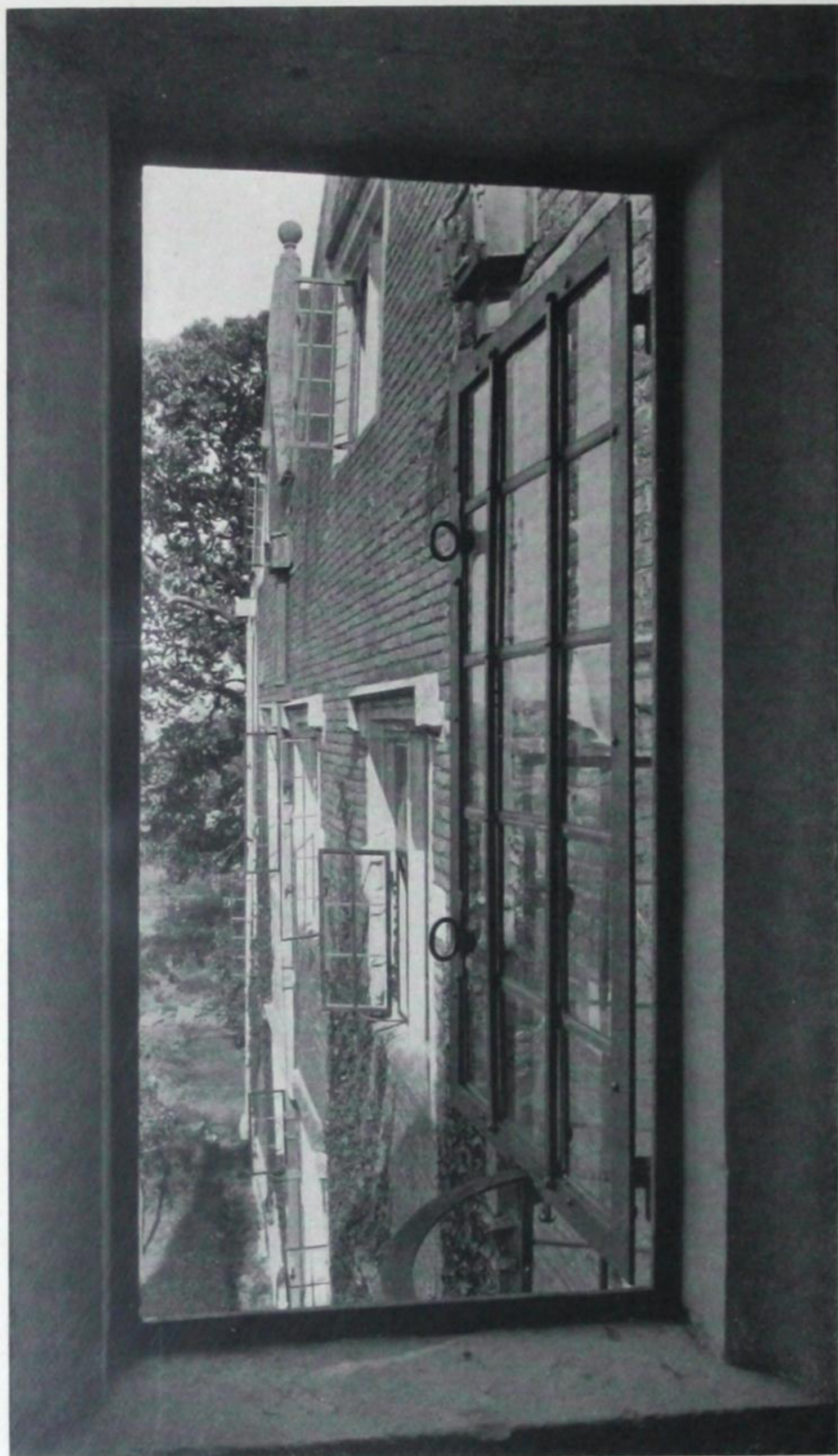
Forsyth & Maule, Architects



KNOX COLLEGE, TORONTO

Chapman & McGiffin, Architects

PHOTOGRAPHS OF RESIDENCES FITTED
WITH HOPE'S CASEMENTS ARE
SHEWN ON THE REMAINING PAGES

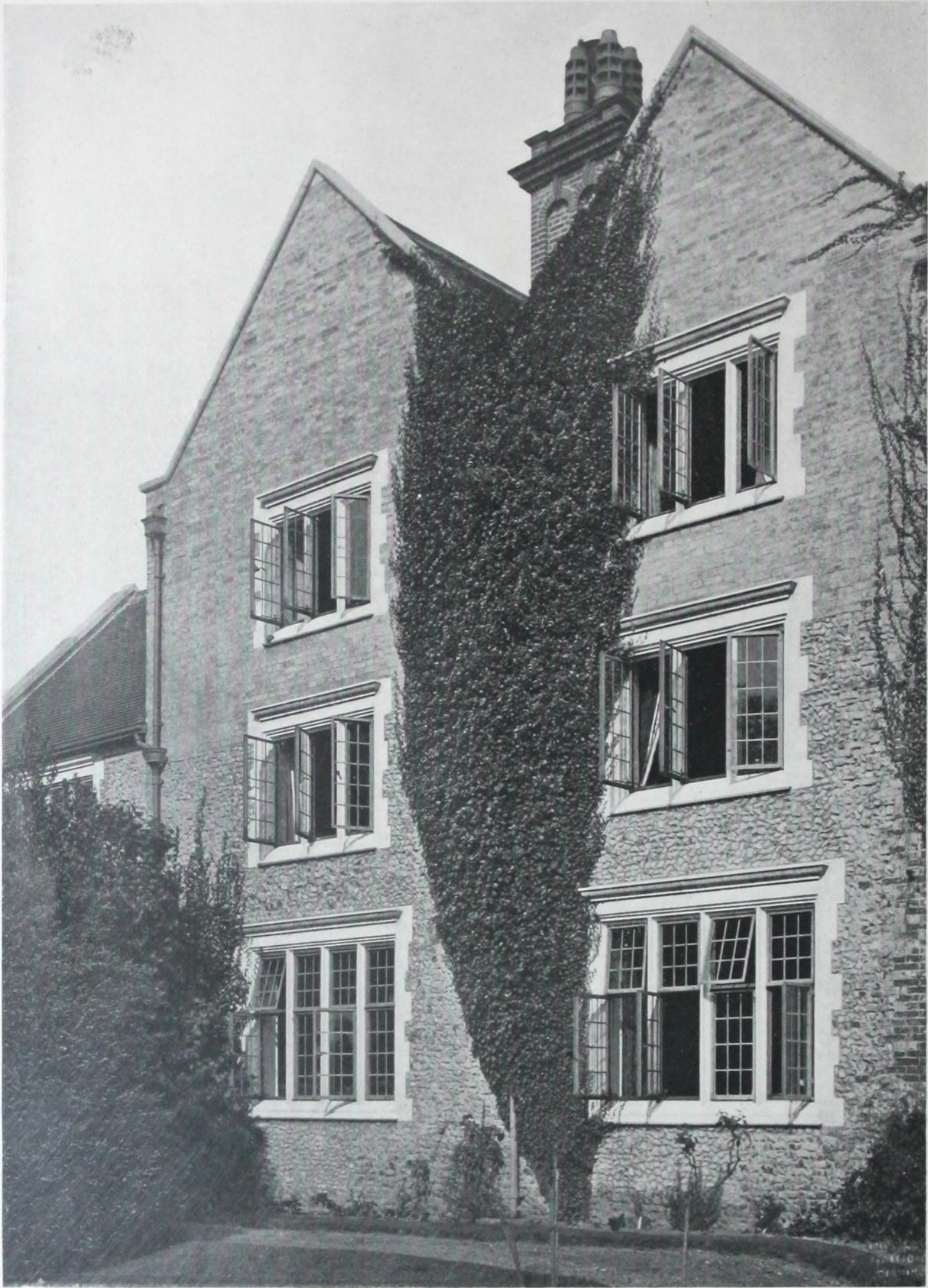


AN ENGLISH WINDOW OF THE 16th CENTURY



BARRINGTON COURT, SOMERSET

Forbes & Tate, Architects



KILVERSTONE HALL, THETFORD

J. S. Corder, Architect



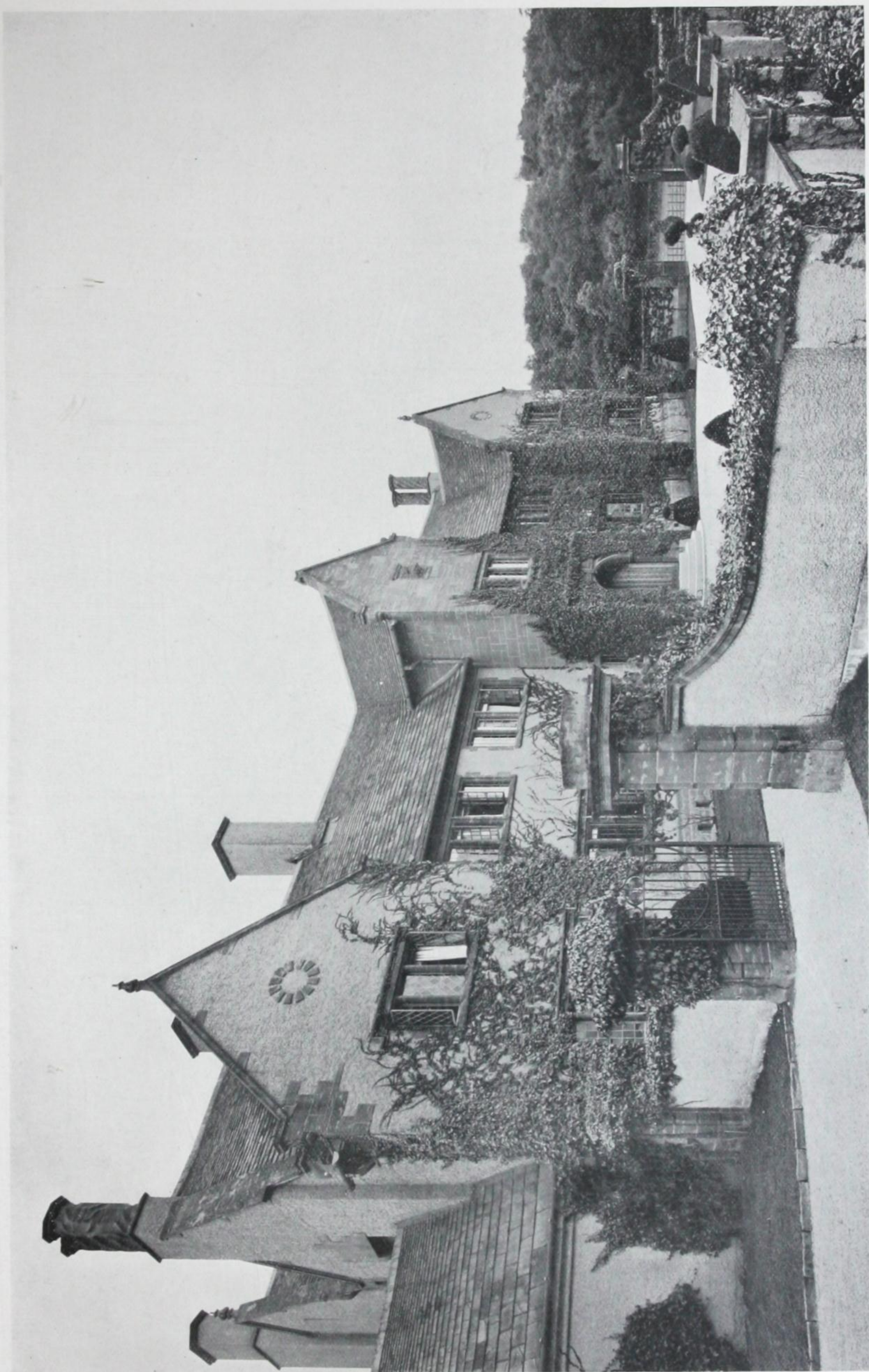
MOUNTON HOUSE, CHEPSTOW

H. Avray Tipping, Architect



CUT MILL, SUSSEX

Deane & Braddell, Architects



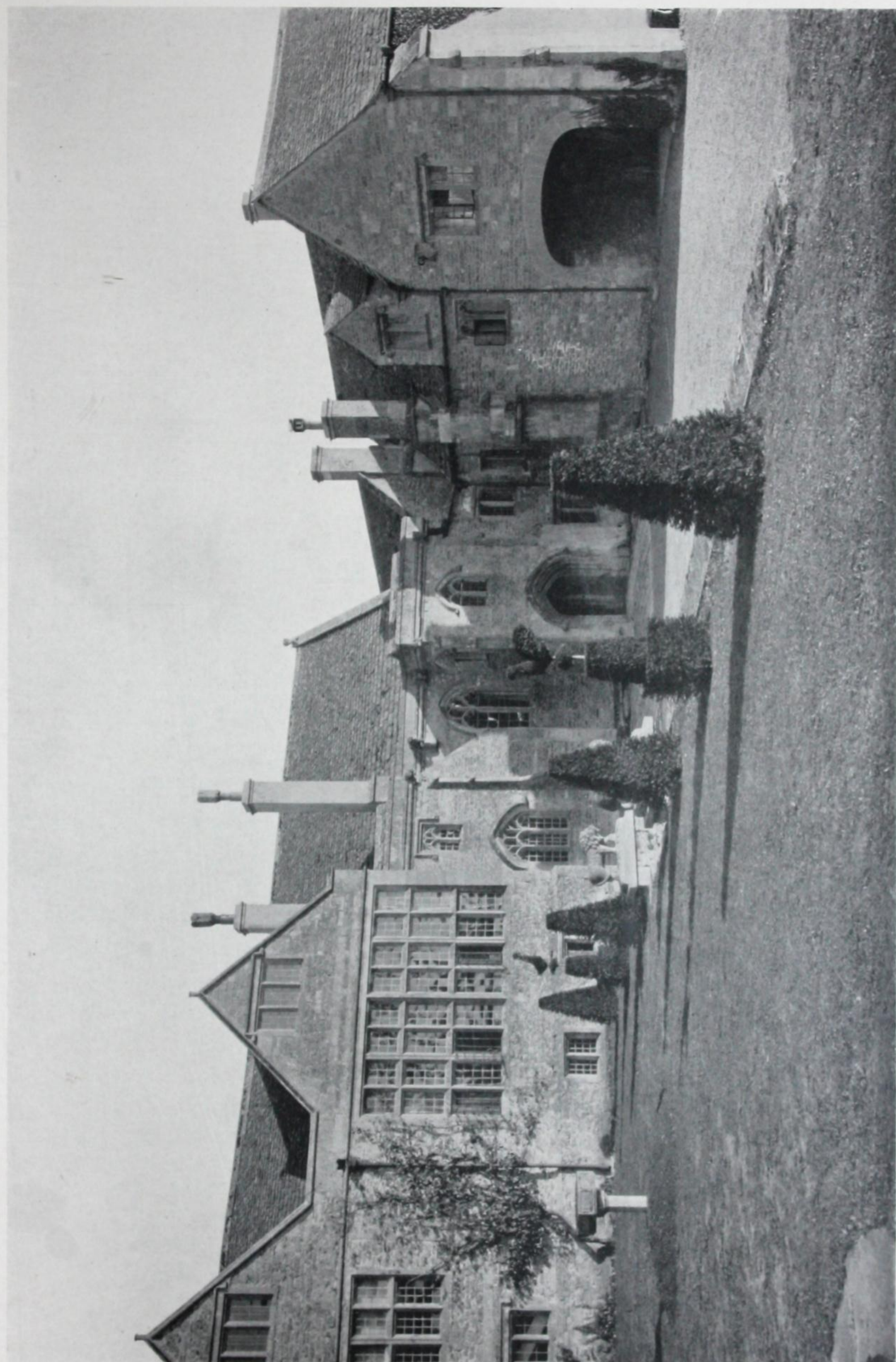
AUSTY MANOR, WARWICKSHIRE

J. P. Osborne & Son, Architects



BARRINGTON COURT, SOMERSET

Forbes & Tate, Architects

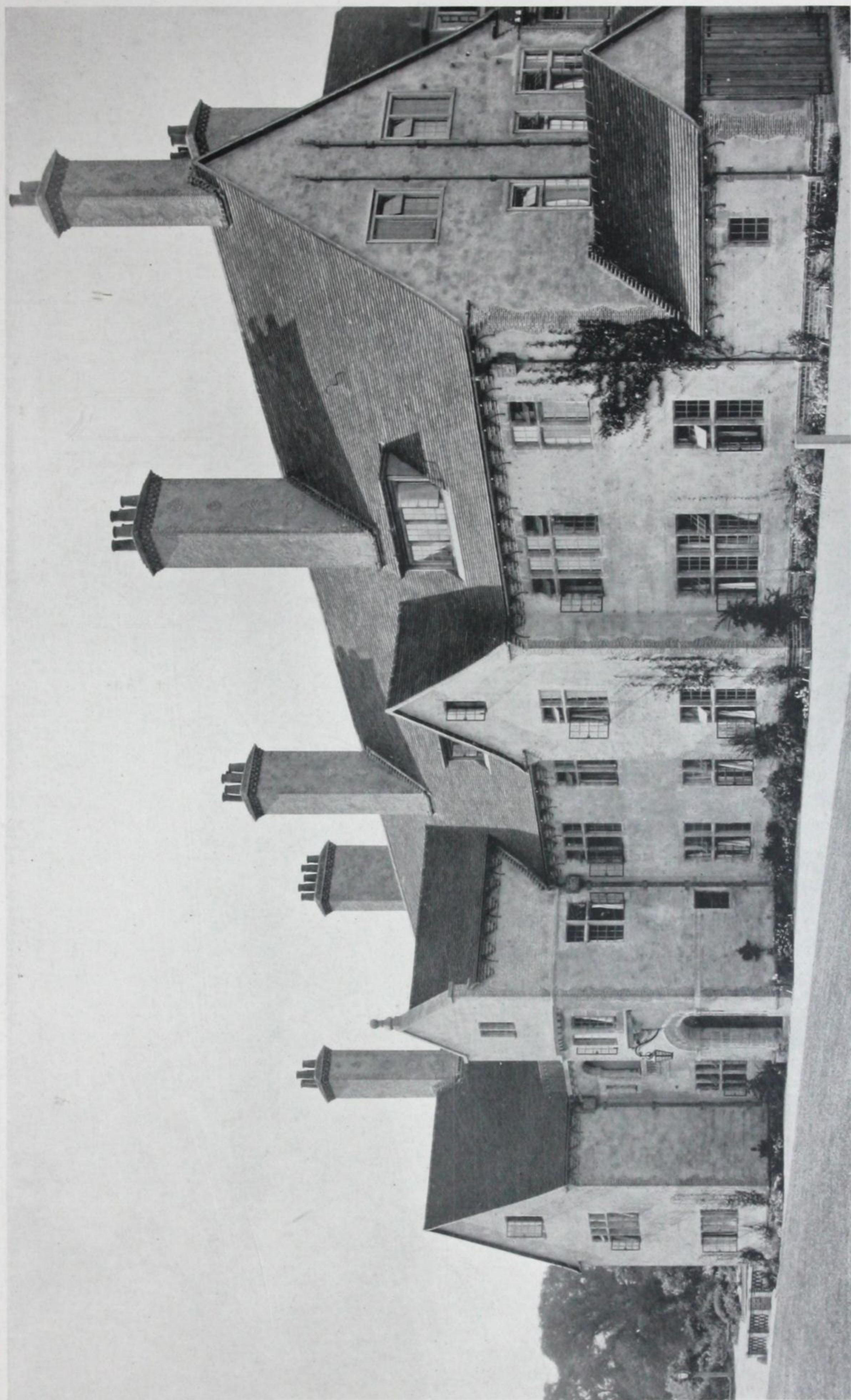


SOUTH WRAXALL MANOR, WILTSHIRE



KILDONAN HOUSE, SCOTLAND

James Millar, Architect



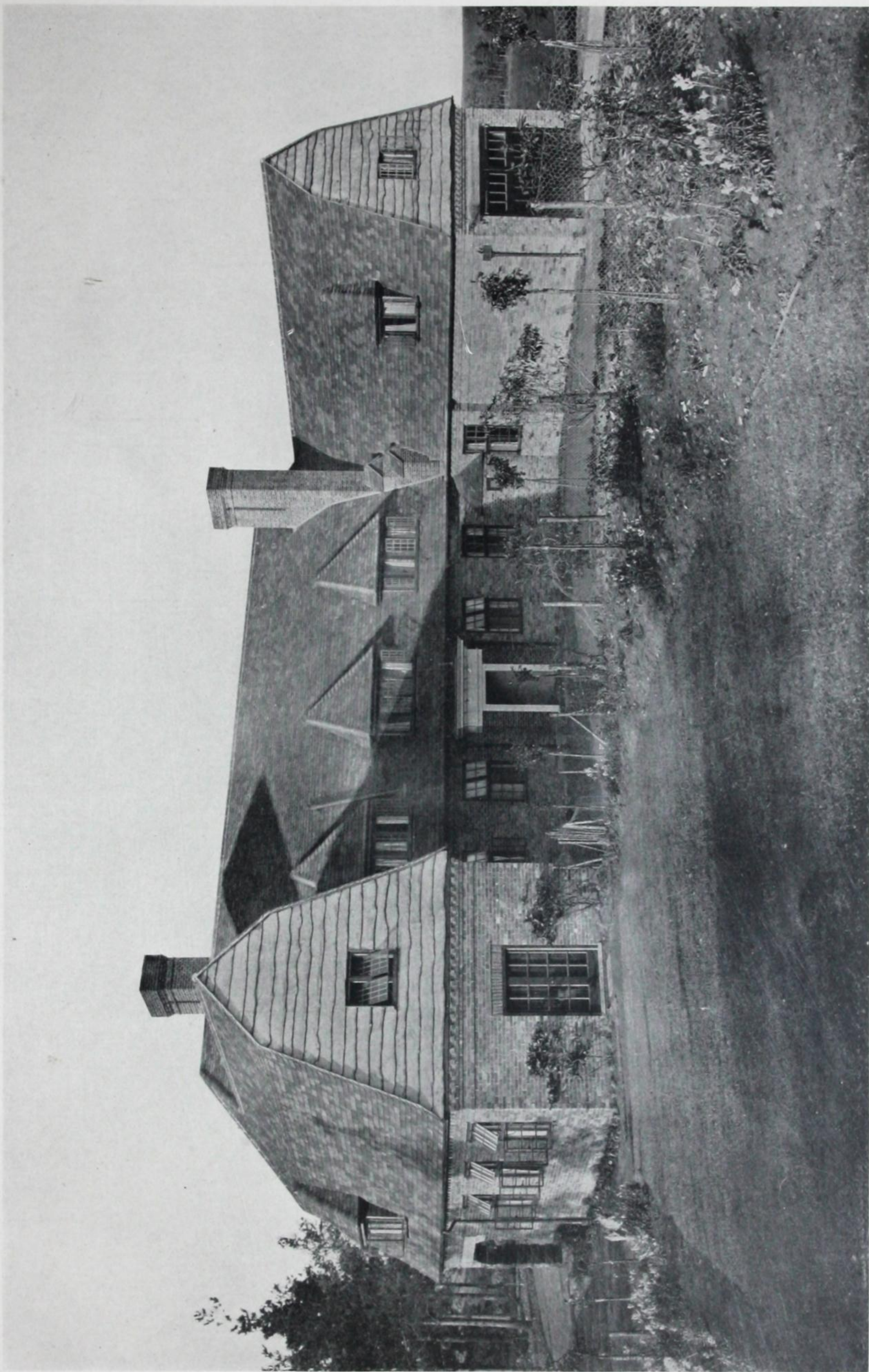
"SHOTTENDANE," MARGATE, KENT

Balfour & Turner, Architects



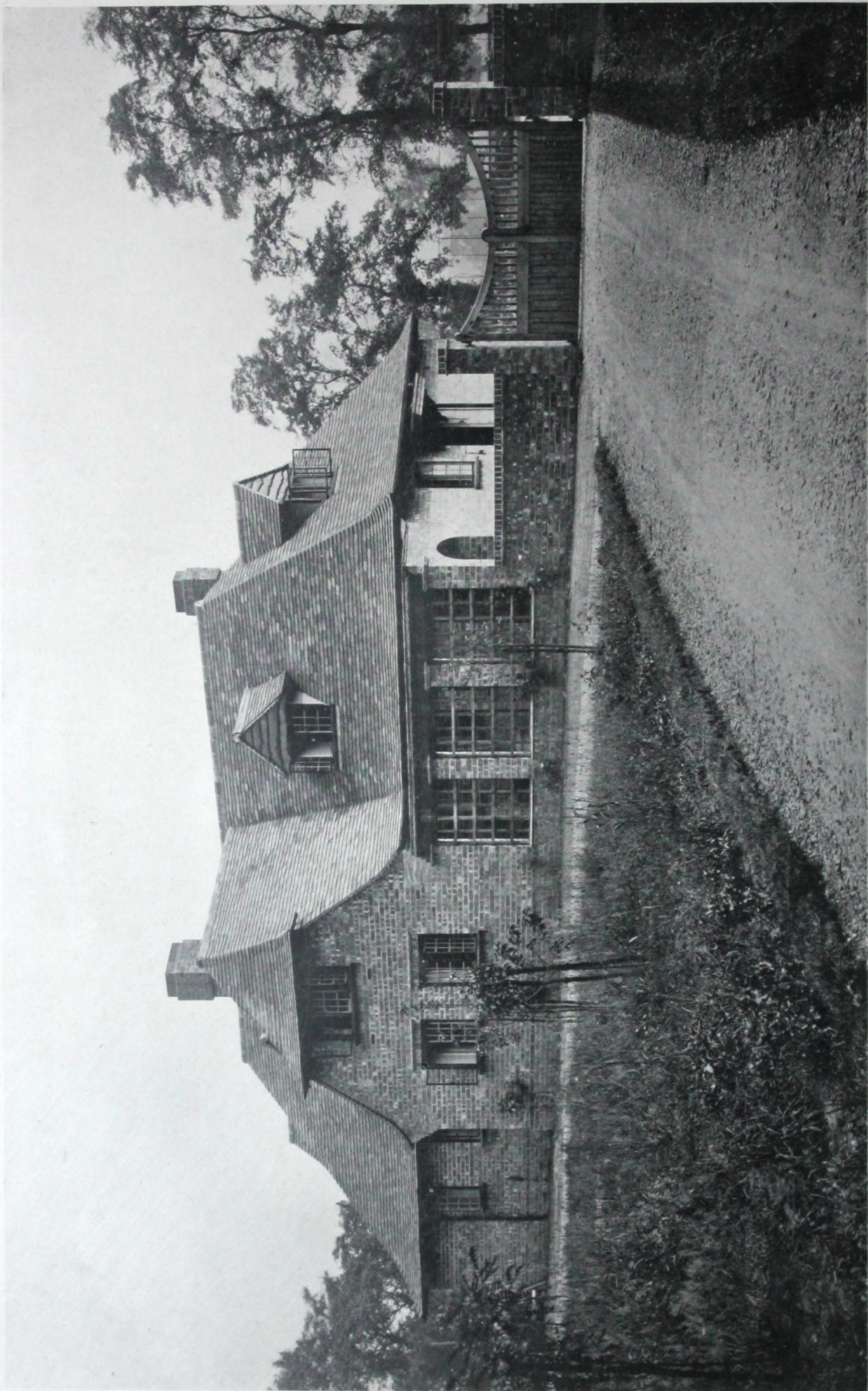
THE THATCHED HOUSE, BLACKHEATH, SURREY

P. Morley Horder, Architect



HOUSE for the RT. HON. DAVID LLOYD GEORGE, M.P., CHURT, SURREY

Philip Tilden, Architect



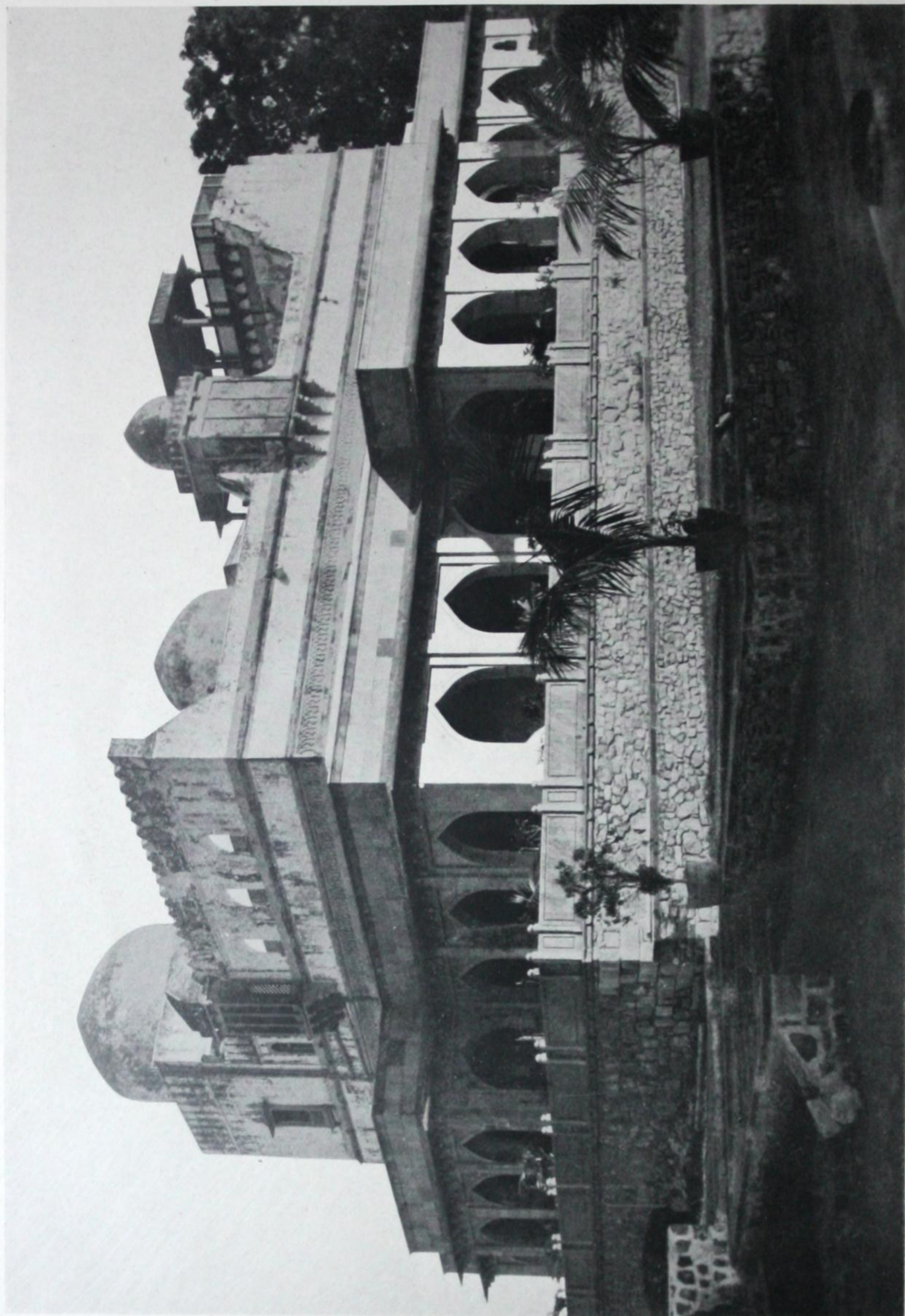
HOUSE AT CHESTER

Tanner & Horsburgh, Architects



THE WINGED FOOT GOLF CLUB, MAMARONECK, N.Y.

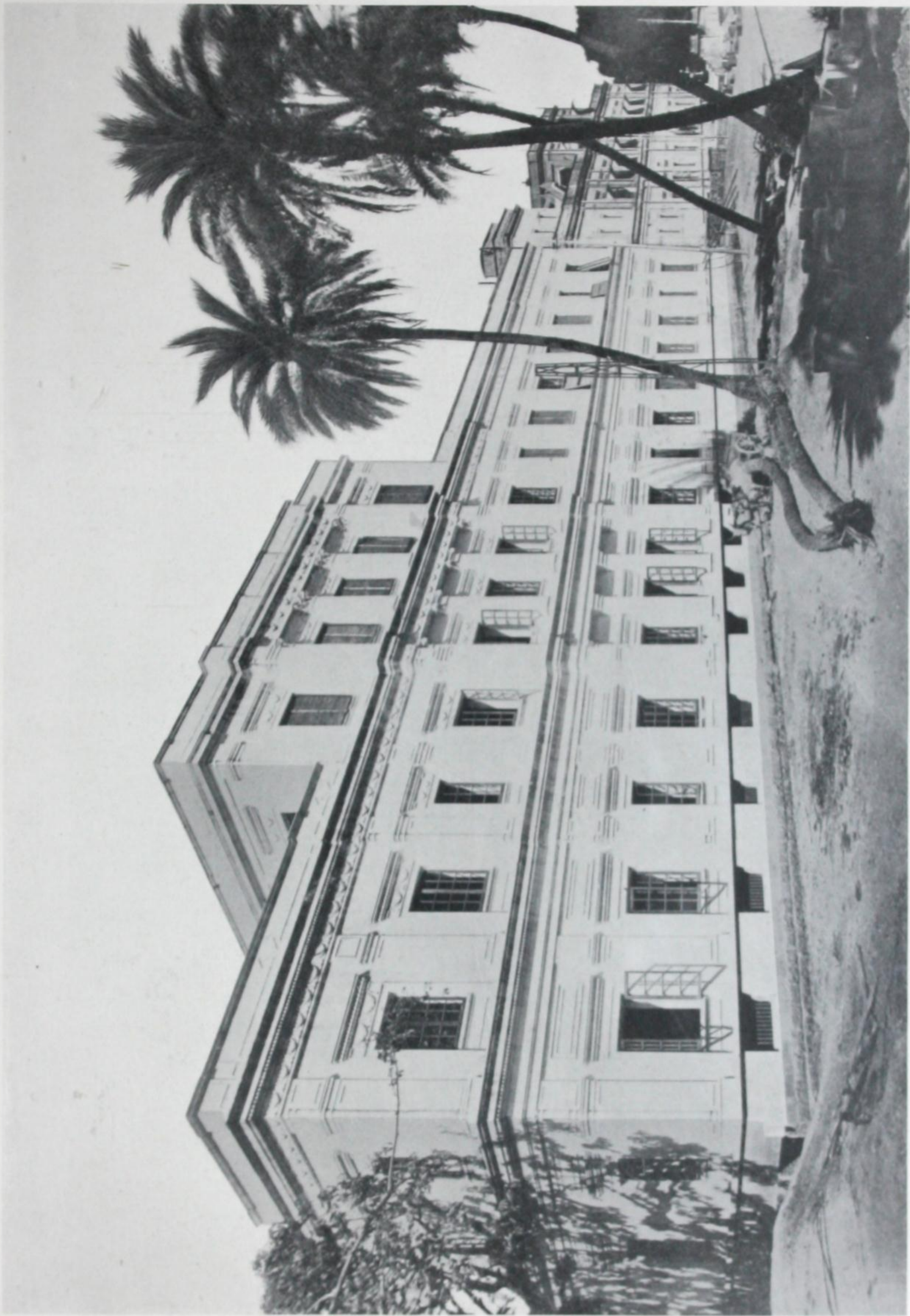
Clifford C. Wendehack, Architect



WATER PALACE, KALIEDAH, INDIA

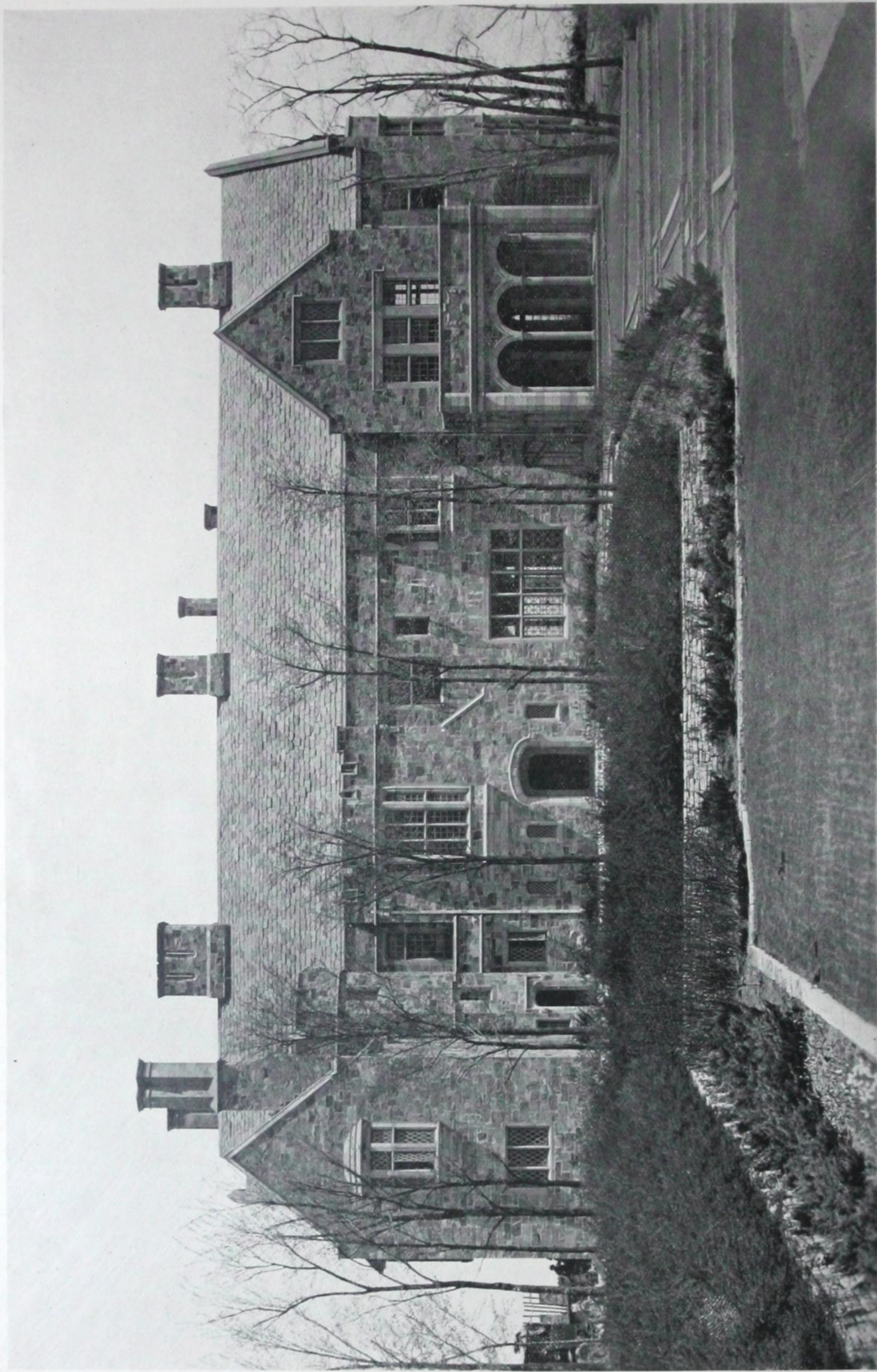
For H.H. Major General Sir Madro Rao Scindia, G.C.S.I., G.C.V.O., A.D.C., Maharaja Sahib of Gwalior

Bernard Triggs, Architect



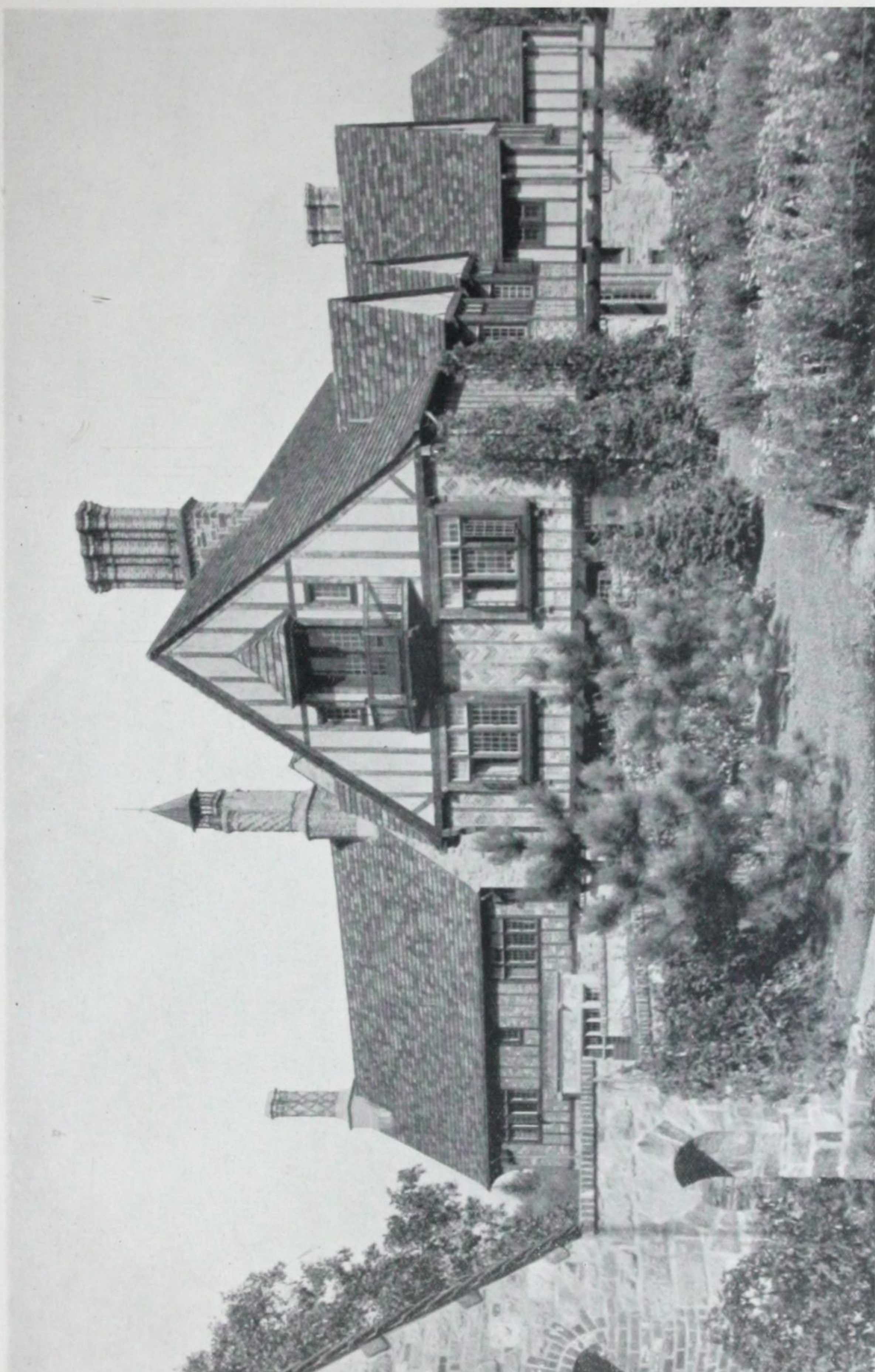
LAL BAGH PALACE, INDORE, INDIA
For H.H. Sir Tukoji Rao Holkar, G.C.S.I., Maharaja of Indore

Bernard Triggs, Architect



M. T. MACLAREN RESIDENCE, MILWAUKEE

Scott & Mayer, Architects



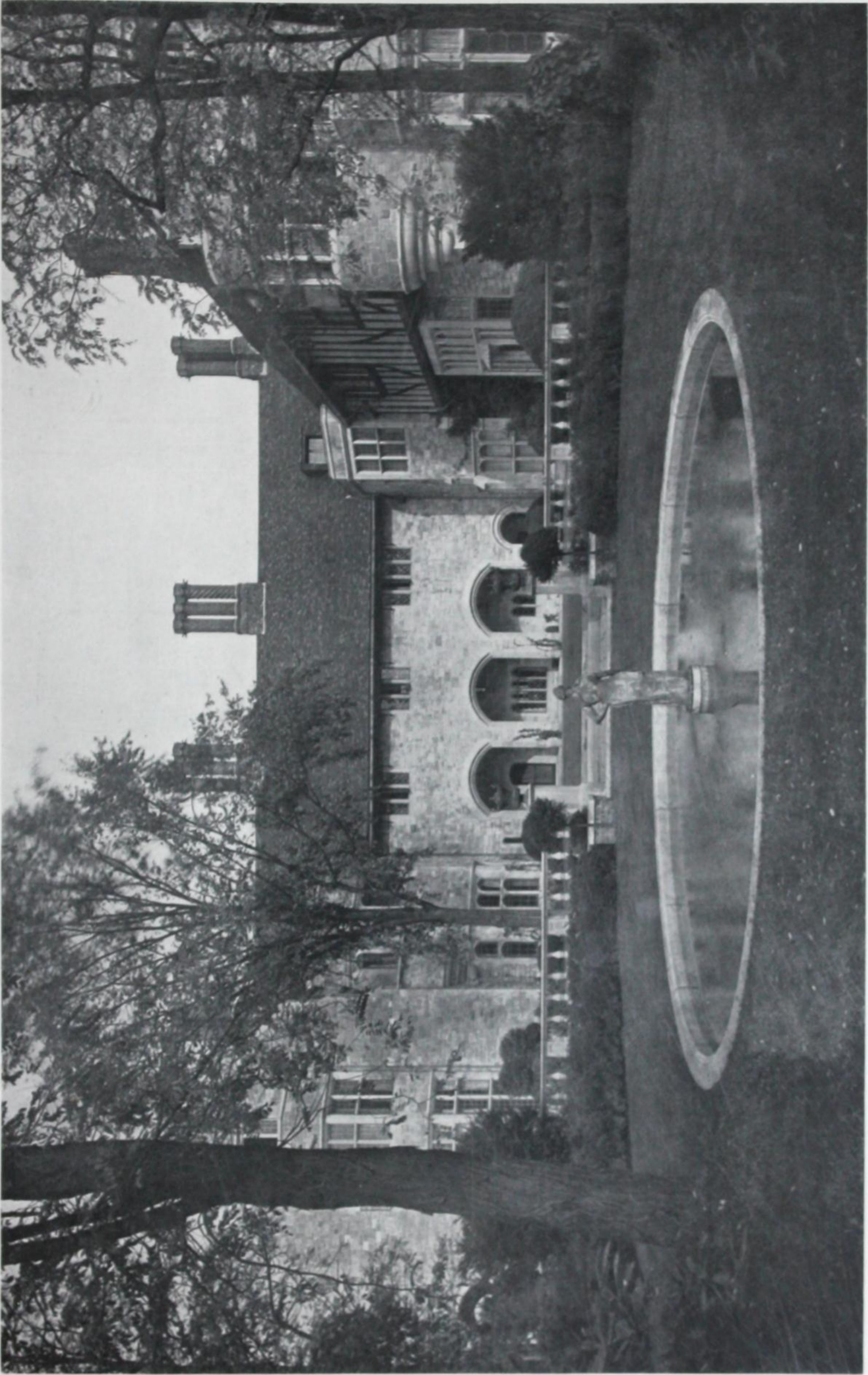
ALDUS. C. HIGGINS RESIDENCE, WORCESTER, MASS.

Grosvenor Atterbury, Architect



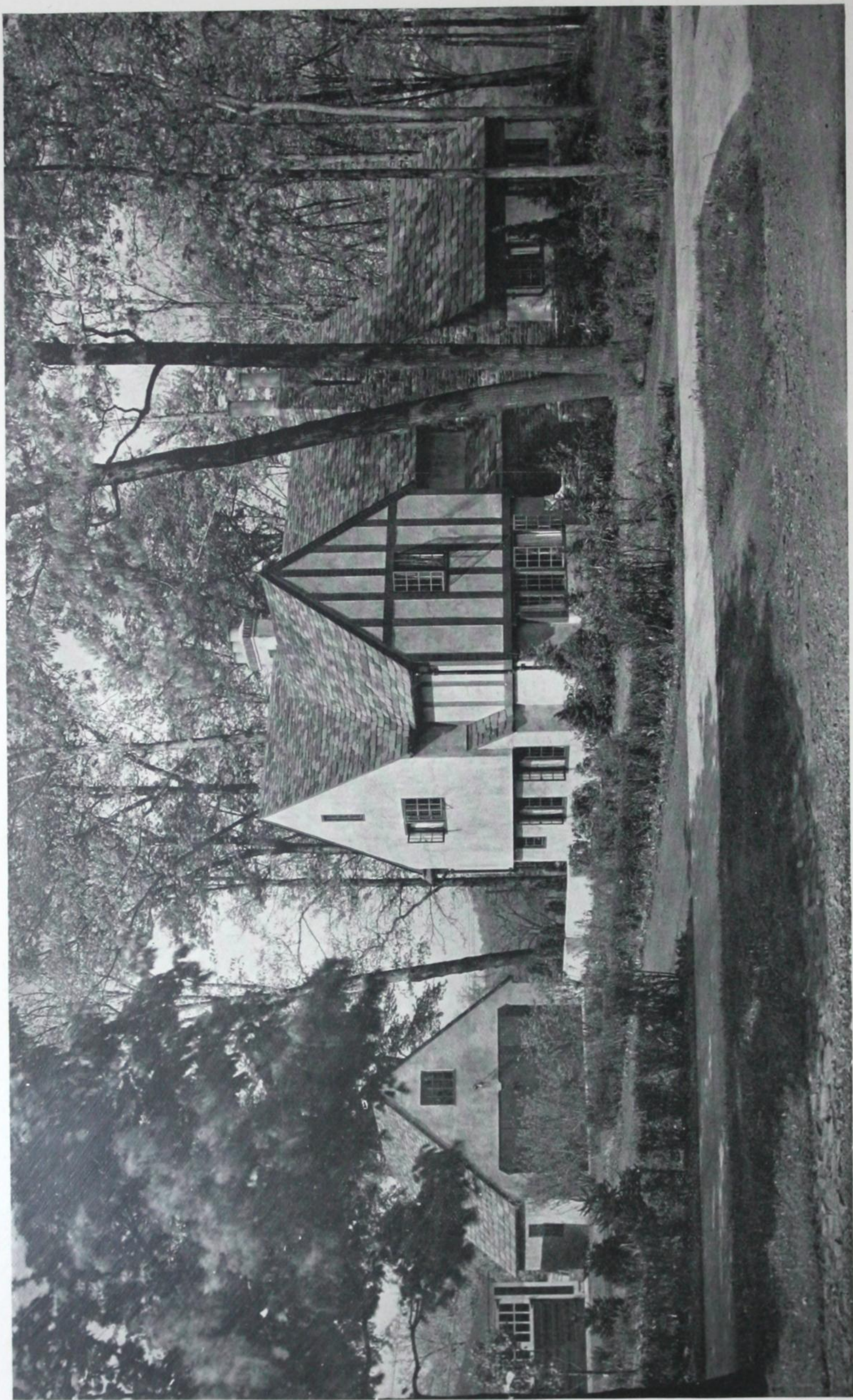
J. J. RASKOB RESIDENCE, WILMINGTON, DEL.

Alexander James Harper & Clay Meredith McClure, Architects



W. R. COE RESIDENCE, OYSTER BAY, LONG ISLAND, N.Y.

Walker & Gillette, Architects



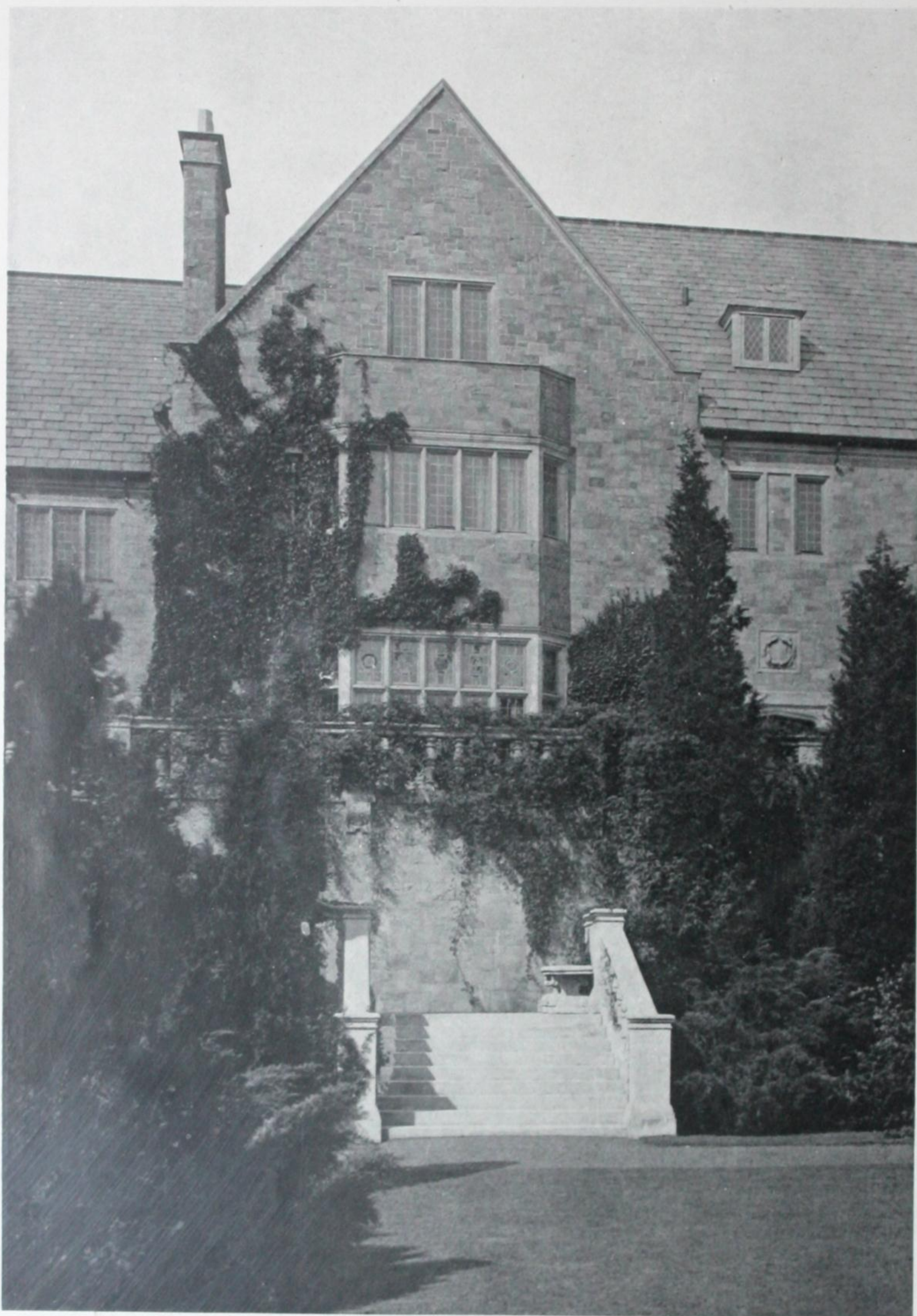
CHAS. H. CUNO RESIDENCE, MERIDEN, CONN.

Frank J. Forster, Architect



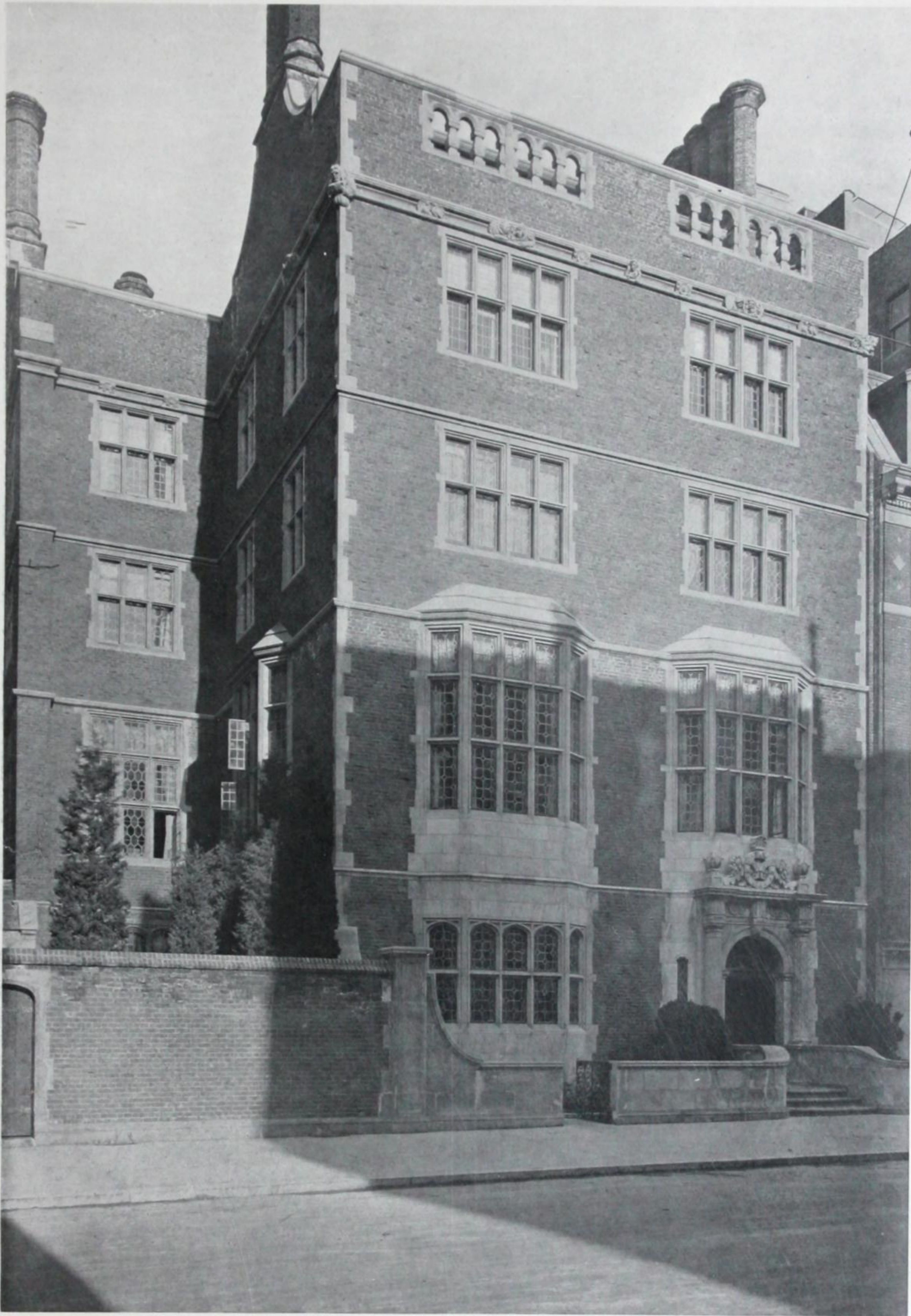
HARRY C. BLACK RESIDENCE, BALTIMORE, Md.

Laurence Hall Fowler, Architect



GEORGE D. PRATT RESIDENCE, LONG ISLAND, N.Y.

Trowbridge & Ackerman, Architects



T. W. LAMONT RESIDENCE, NEW YORK CITY

Walker & Gillette, Architects

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